

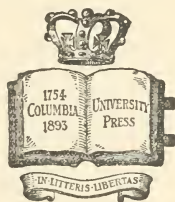
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::::: JULY, 1890, TO JUNE, 1898

BIBLIOGRAPHICAL NOTE

THE COLUMBIA UNIVERSITY BULLETIN was founded in 1890. The first number appeared in July, 1890; the twentieth and last number in June, 1898. Nos. I-XIV were published by authority of the Trustees of Columbia University; Nos. XV-XX, by the Columbia University Press. Prof. H. T. Peck was Chairman of the Editorial Committee from July, 1890, to July, 1894; Prof. G. R. Carpenter from December, 1894, to June, 1898. The place of the BULLETIN is now taken by the COLUMBIA UNIVERSITY QUARTERLY, the first number of which appeared in December, 1898.

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TO

COLUMBIA UNIVERSITY BULLETIN

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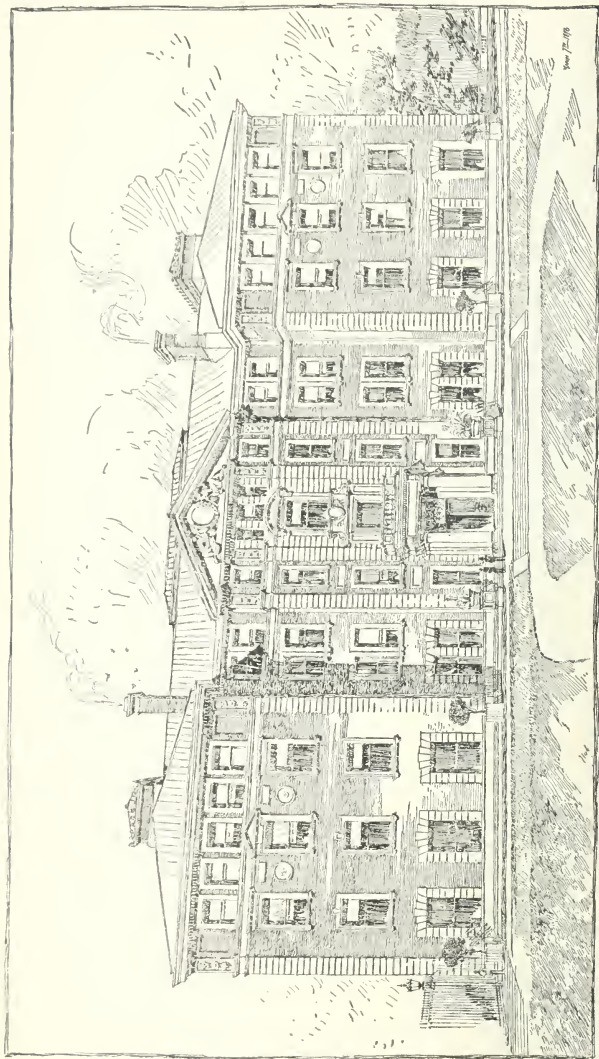
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HAVEMEYER HALL.

COLUMBIA UNIVERSITY BULLETIN

DECEMBER, 1896

XV

HAVEMEYER HALL AND THE ENGINEERING BUILDING

The laying of the corner-stones of Havemeyer Hall and the Engineering Building and that of the corner-stones of the new buildings of Barnard College were events full of significance as additional steps in the wonderful development of Morningside Heights as an educational centre. The group of university buildings, impressive even in their unfinished state from their very magnitude ; the Teachers College, already an imposing pile, and now greatly enlarged by the extension which is nearing completion ; and, lastly, the new buildings of Barnard, which less than a year ago seemed unattainable, speak more eloquently than words of the advances which higher education has made in New York during the past few years. When it is remembered that the Teachers College and Barnard have been in existence but little more than seven years, the progress which they have made is astonishing. Nothing could have made such advances possible but the development of a more extended and intelligent public interest in education, a keener appreciation of its value, and a more liberal and public disposition to promote the higher interests of the city. The accomplished fact which these buildings represent offers an assurance that they mark but the begin-

ning of a more intelligent and patriotic civic life. Barnard is to be congratulated upon having secured the help of the donors whose names are to be so nobly perpetuated, and who have placed her upon so sure a foundation, and to the givers of Havemeyer Hall Columbia owes a debt of gratitude which she can repay only by the service which she shall render to the advancement of science. No greater opportunity for usefulness could well be offered, nor could a useful life find a more fitting memorial than one which is founded upon the intelligent application of science to commercial purposes and opens the way to further scientific and commercial progress.

The corner-stones of Havemeyer Hall and the Engineering Building were laid on the fourth of November, in the presence of the Trustees, the donors of Havemeyer Hall, and the heads of the departments which are to occupy the buildings. Bishop Littlejohn officiated at the laying of the corner-stone of Havemeyer Hall, and after the stone had been laid by Mrs. Kate B. Belloni, a daughter of the late Frederick Christian Havemeyer, in whose memory the building is given, President Low delivered the following address:

Gentlemen of the Trustees, Ladies and Gentlemen:

Havemeyer Hall, the corner-stone of which has just been laid, is to be the home of the Chemical Department of Columbia University. Temporarily it will give shelter, also, to the Department of Architecture and to the Department of Metallurgy; but the day is not likely to be far distant when the Department of Chemistry will need all the accommodation it supplies. It is fitting that one of the main angles of our entire group of buildings should be buttressed on this science. I remember well that when the National Academy of Sciences met in this city, a few years ago, Professor Pickering, the astronomer, of Harvard University, displayed photographs of the spectra of stars that are out of sight to the naked eye. Professor Brewer, of Yale University, in talking with me about this display, remarked that if he had been asked twenty years before which science of the whole range of sciences was "of the earth, earthy," he would have replied without hesitation, chemistry; because, unless you could handle a substance, how was it possible to tell what entered into its composition? Yet here we are, he added, discovering the chemical composition of stars that we cannot even see! Thus chemistry bears emphatic testimony to the unity of the universe, and, with its companion sciences of astronomy and physics, is helping us, day by day, to read, even in the farthest reaches of space, "what is still unread in the manuscripts of God."

If, on the other hand, you will pass up and down the chemical museum

that has been created and arranged for this University by Dr. Chandler, you will be astonished to perceive how chemistry is related, in one form or another, to the daily necessities of life and to almost every imaginable industry and art. Food and drink, in all their forms, and the air we breathe, are subjects of chemical analysis; so that in these latter days chemistry is the handmaiden of medicine no less than of the industrial arts.

I recollect that a prominent steel manufacturer said to me, not long ago, that he had made steel for two years out of the waste heaps of his neighbors' factories, because he had been the first to employ a trained chemist as a part of the regular force in his establishment. The industrial progress of modern Germany may almost be said to rest primarily upon chemistry, so important a factor is it in all German industries. Similarly, I am glad to believe that the generous donors of Havemeyer Hall have thought it to be, in an especial sense, a fitting memorial of the late Frederick Christian Havemeyer to erect a home in this University for the Department of Chemistry, because the industry of the refining of sugar rests so immediately upon this science. Havemeyer Hall stands, also, in a fortunate neighborhood to the Engineering Building, for the laws of mechanics, as applied by the engineer to the manipulation of the raw sugar and the various syrups, have been only less influential than chemistry in cheapening the industrial processes involved in sugar refining. The day will come in the United States, I am confident, when the employment of trained chemists will be as common in the manufacturing industries of the country as it is in Germany. It is, therefore, an eminently gracious and graceful thing for men to do, whose fortune rests largely upon the advances that chemistry has made possible in the development of their business, to give to this University the means of equipping young men for service as chemists in all the manifold ways in which chemists may serve the community and the country. The field of the chemist's labor, as I have shown, is as wide as the universe, and his opportunities of service as various as the industries of men.

To prepare young men for such a service this building has been given, and Columbia has pledged herself to the donors to make it as highly useful as it is in her power to do. To redeem this pledge she will put forth every effort, because she well understands that only so can she make Havemeyer Hall a worthy memorial of the useful life of Frederick Christian Havemeyer.

At the conclusion of his address President Low called upon Professor Chandler, who said:

Mr. President, Trustees of Columbia University, Ladies and Gentlemen:

I can not express in words the pleasure and satisfaction which it gives me to enjoy the privilege of being present to-day at the laying of the cornerstone of this magnificent chemical building. Ever since the Chemical Department of the School of Mines opened its first laboratory, for twelve students, in the cellar of the old building at Forty-ninth Street, thirty-two years ago, on November 15, 1864, I have looked forward with hope to the day when suitable accommodations should be provided at Columbia for this my favorite science.

And now my expectations are to be realized. The finest and most com-

plete chemical building in the world is now rising upon the most favorable spot on New York Island, and Columbia University will soon be able not only to offer every facility for the study of chemistry, in all its branches, theoretical and applied, but also to invite graduate students to enter its well equipped laboratories to prosecute original investigations.

It is a great pleasure to me that this gift should come from a family which stands so high in this community, members of which have long been my friends, and some of whom have been pupils in our laboratories, and it is extremely satisfactory that this building is to bear the name of Havemeyer Hall, and to stand as an enduring monument to Mr. Frederick Christian Havemeyer, who laid the foundation of one of the most important and extensive chemical industries of this country.

As the representative of the Chemical Department of Columbia University, I promise to do everything in my power to make the usefulness of this building equal the generosity of its donors.

The Rev. Dr. Coe officiated at the laying of the cornerstone of the Engineering Building, and Professor Croker, representing the Department of Electrical Engineering, laid the stone. Henry S. Munroe, E.M., Ph.D., Professor of Mining, spoke as follows of the purposes to which the building is to be devoted :

We are to-day to lay the corner-stones of two more of the group of beautiful buildings planned for the new home of Columbia University. The Library Building, with its classic porch, dominating the group with its lofty dome, is appropriately devoted to literature, philosophy, and law, representing the historical university faculties. The four great buildings which we see rising about us, of a more modern type of architecture, assigned to natural history, physics, chemistry, and engineering, offer striking testimony to the place that science has conquered in the modern university. Formerly it was accepted without question that "the proper study of mankind is man." In this age we have begun to look about us, and we now recognize that the study of mankind is incomplete without study also of his environment. The world in which we live, and the other worlds with which we are surrounded; the animals and plants inhabiting the world with us, and those which lived here in ages past; the laws of the universe; the forces of nature offer boundless fields for the student.

The renaissance architecture of these scientific buildings typifies the new life given to the university by science. Not only does education gain by the enlargement of the field of study, but methods of investigation borrowed from men of science, and applied to the study of language, of philosophy, of history, and of law have enabled these to make a greater advance in the last few decades than in centuries before.

The dedication of a university building to engineering possesses great significance. It shows how far Columbia, in common with other American institutions of learning, has advanced beyond the narrow view of the mediæval university which still obtains in Europe. It is a recognition of the

truth that science is not only to be followed for its own sake, for the pleasure and excitement of conquering new fields, but that scientific studies with a definite object in view, investigations that will benefit mankind, are even more worthy, and may properly find place in an institution of higher learning.

The erection of a building for engineering among the first of Columbia's new halls is an appropriate recognition of the fact that Columbia was one of the first colleges in this country to add engineering studies to its curriculum, being anticipated in this by Union, Harvard, Yale, and Michigan only. Columbia was the first to establish a course in mining engineering; she was among the first to give instruction in sanitary engineering, in electrical engineering, and in these and in many other respects Columbia has taken the lead in engineering education.

In Europe the universities for the most part hold themselves aloof from the schools of technology and engineering, and there is a very strong feeling there among the scientific men connected with the universities against engaging in useful work, against applied science. Recently a distinguished German mathematician has uttered a protest against this feeling. He claims that applied mathematics is worthy the attention of the student of pure science, and that he will be benefited rather than harmed by practical problems and practical applications. His protest has taken a peculiar form, as if the professor hardly dared to face boldly the criticisms of his colleagues should he turn his mathematics to a purpose altogether useful. The distinguished savant gravely applies himself, with the aid of higher mathematics, to the investigation of the laws governing the movement of a spinning top!

It is fortunate for us that there is in this country but little of the prejudice against applied science that is found abroad, and against which Professor Klein finds it necessary to protest. At Columbia pure science and applied science work together in harmony and with mutual advantage.

This building is to be equipped with laboratories for the study of practical problems in mining, civil, mechanical, and electrical engineering. Problems of the greatest importance to the world and to society await solution in these various branches of engineering.

In an address, a year or so ago, before the Alumni of the School of Mines, Dr. Raymond showed that the world has begun to save money and to grow rich and comfortable only within the present century. He showed that this prosperity dates from the time that steam began to take the place of human energy. The use of steam has multiplied the power and efficiency of the race. With its aid we are forcing the earth to give up her treasures of coal, oil, gas, useful and precious metals, while agriculture, fisheries, and manufactures have developed as never before. When we compare the condition of the peasant and the laboring man of the Middle Ages with the comparative comfort enjoyed by men of similar position to-day we realize the advance that has been made. But much remains to be done. Owing to our limited and imperfect knowledge, we waste, of necessity, vastly more of the wealth that the earth furnishes us than we utilize. For example, it is estimated that for every ton of anthracite coal sent to market one and a-half tons are lost in mining and in preparing the coal for use. Last year the coal product of eastern Pennsylvania was worth at the mines about \$90,000,000. The loss was then about \$135,000,000. It is estimated also that we utilize but about one-eighth of the power stored up in coal when we burn it under boilers to furnish steam.

In engineering construction, to guard against possible imperfection in material and unknown sources of weakness, we are accustomed to employ "factors of safety," and to use three, four, or five times as much material as rigid calculations, based upon the best obtainable data, would seem to demand. These are probably extreme cases. The loss in mining is not often as large as in Pennsylvania, where the conditions are unfavorable to economic working. Water power, steam power, and electric energy are more fully utilized than calorific power. "Factors of safety" will always be necessary. Nevertheless, similar instances of waste of material and loss of energy meet us on every hand, and it is not too much to say that we lose or waste vastly more of nature's wealth than we utilize. Every discovery in applied science tends to lessen these losses. The laboratories which it is proposed to equip in this beautiful building have thus important work to do, and if properly used they may render most important service to mankind. When we consider what has been done for the race in the present century, it seems that we have only to continue this good work and use more carefully nature's bounty to bring about the utopian dreams of the philanthropist.

The first object of this building and these laboratories is, however, the training of young men as engineers. In addition to the waste due to our imperfect knowledge, even greater loss and waste results when mines, manufacturing, and public works are in incompetent hands. The useful work that is now being accomplished by the thousand young men who have been graduated from the School of Mines, and the work that will be done by the thousands that will come after them, is sufficient warrant for the large sums spent by this University on their education, and the still larger sums she is proposing to spend as trustee of the wise and far-seeing men who have put and are putting their wealth into her hands. The money spent in the training of these young men is well spent, and yields returns that cannot be measured. In this building will be trained mining engineers to develop and operate mines, to furnish for our use the treasures of the earth upon which modern civilization is founded—coal to take the place of human energy and relieve the race from drudgery, and the metals, the use of which marks the difference between the primitive savage of the stone age and civilized man with all the comforts and luxuries of the nineteenth century. In this building will be trained civil engineers to construct and take charge of public works, roads and bridges, railroads and canals, to improve our rivers and harbors, to superintend great municipal works, to irrigate deserts, to drain swamps and fit waste places for human habitation. Here will be trained electrical and mechanical engineers, who harness the mighty forces of nature and compel them to our service, to move us when we will, to bring merchandise for us from the uttermost parts of the earth, to fashion wood and metal and other products of nature for our service.

It is fortunate for the School of Mines and the School of Engineering that they are associated with a great university. This association forces them to maintain high ideals and a high standard of scholarship. The student of applied science has the advantage of university instruction in pure science and mathematics, and the foundation for the professional studies is thus well and broadly laid. The contact with men who are seeking liberal culture cannot fail to extend the horizon and broaden the views of the tech-

nical student, and we hope may induce him to seek first a liberal education before entering upon his professional studies.

On the other hand, the demands of the courses in applied science in the departments of mineralogy, geology, chemistry, and physics have necessitated the splendid equipment of laboratories and museums now possessed by the University in these branches of science. Thus each gains by the presence of the other, and in their union lies the strength of the typical American university—Columbia.

The following papers and documents were deposited in the corner-stones: charter and acts relating to the University; statutes of the University and by-laws of the Trustees; programme of the Dedication proceedings, historical sketch of the University, and addresses delivered upon the Dedication; general catalogue of the Officers and Alumni; catalogue for the year 1895-96; annual reports of the President and Finance Committee for 1896; circulars of information of the Departments of Chemistry, Architecture, and Metallurgy and of the Departments of Civil, Mining, Electrical, and Mechanical Engineering; views of Havemeyer Hall and the Engineering Building; a copy of the last number of the UNIVERSITY BULLETIN, and newspapers of the day; and also in the corner-stone of Havemeyer Hall, a copy of the letter of Mr. Henry O. Havemeyer of April 7, 1896, offering to present to the University a chemical building, to be known as Havemeyer Hall, in memory of the late Frederick Christian Havemeyer, as a gift from Charles H. Senff, his nephew, Frederick C. Havemeyer, Theodore A. Havemeyer, Thomas J. Havemeyer, and Henry O. Havemeyer, his sons, and Kate B. Belloni and S. Louisa Jackson, his daughters; together with copies of the agreement between the University and the donors, and of the resolution of thanks adopted by the Trustees.

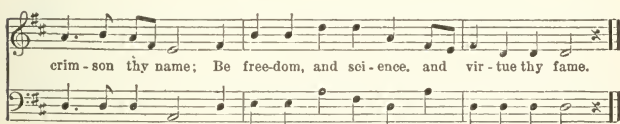
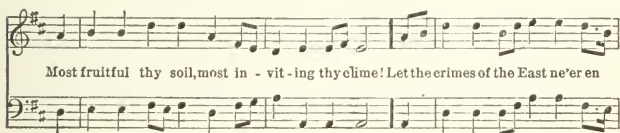
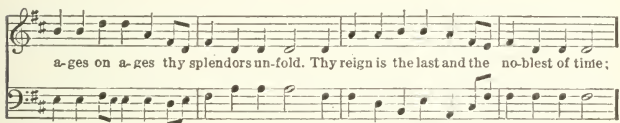
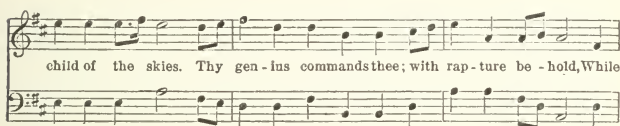
ORIGIN OF THE NAME "COLUMBIA"

At a recent meeting of the Yale Alumni Association of Fairfield County Mr. Ellingham H. Nichols, LL.D., the President of the Association, called attention to the fact that the name "Columbia" was probably suggested by the army song of the Revolution, "Columbia, Columbia, to glory arise." The song was written by the Rev. Dr. Timothy Dwight, the elder, while a chaplain in the American army, and Mr. Nichols, in the course of his address to the Association, after quoting the song, asserted that the word "Columbia" never had been used before, and that he had no doubt that it originated with Timothy Dwight. For confirmation of his statement, he referred to a *Glossary of New Names* compiled in 1864 by William A. Wheeler, a nephew of Noah Webster, who, under the head "Columbia," says that this word has not been found in any writings prior to those of Dr. Dwight, and that it undoubtedly originated with him, and quotes the words of the song. It seems practically certain, therefore, that Dr. Dwight was the originator of the word, or at least was the one who first brought it into general use, and the popularity of the song, which must have made it familiar to every one, renders it extremely probable that it suggested itself to the Legislature of 1784 when it was seeking a new name for the College that would present a striking antithesis to the original name of King's College. By that name "Columbia" Dr. Dwight had idealized the new republic; the word had become as significant of liberty and patriotism as the title of "King's" was of royalty, and in adopting it the Legislature gave expression to its desire to change the character of the College from that of a royal foundation to that of an institution of learning representing the new-born national hopes and aspirations of the people. That they intended to give the College a broader scope and to make it a university in fact, is indicated by the terms of the Act of 1784, and the name which they selected is entirely consistent with their purpose.

The words and music* of the song as originally published are as follows :

COLUMBIA.

OLD SONG BOOK. 1796.



Thy fleet to all regions thy power shall display,
 The nations admire, and the ocean obey;
 Each shore to thy glory its tribute unfold,
 And the East and the South yield their spices and gold.
 As the day-spring unbounded, thy splendor shall flow,
 And Earth's little kingdoms before thee shall bow;
 While the ensigns of union, in triumph unfurled,
 Hush the tumult of war and give peace to the world.

*The music is reproduced from the *New England Magazine*, by permission of the Editor.

Thus, as down a lone valley, with cedars o'erspread,
From war's dread confusion I pensively strayed,
The gloom from the face of fair heaven retired;
The winds ceased to murmur; the thunders expired;
Perfumes as of Eden flowed sweetly along.
And a voice as of angels enchantingly sung:
"Columbia, Columbia, to glory arise,
The queen of the world and the child of the skies."

REPORT OF THE ALUMNI COUNCIL

At the meeting of the Alumni Council held October 28, 1896, the Secretary, Mr. William Allen Smith, submitted his annual report, of which the following is an abstract:

On November 20, 1889, shortly before the inauguration of Dr. Low as President of Columbia College, the officers and committees of the Alumni Associations of Columbia College and of the School of Mines of Columbia College united in a dinner at the Union League Club, at which President Low was the guest of honor. From that time and continuing through 1893 the subject of a closer union of the Alumni of the two schools was frequently mentioned and was discussed in the governing boards of the two Associations. Various proposals and overtures were made, but up to the beginning of 1894 no definite result had been achieved beyond making Alumni of the School of Mines eligible to election as Associate Members of the Association of the Alumni of Columbia College. In 1892 and 1893 this subject was informally discussed in conversation by President Low, Professors J. H. Van Amringe and Frederick R. Hutton, Mr. John B. Pine, and Mr. William B. Parsons. As the result of these discussions and conversations, committees of conference on social reunions and federation were appointed early in 1894 by both Associations, and a like committee was appointed by the Association of the Alumni of the College of Physicians and Surgeons. The first meeting of the Committees of Conference, consisting of three members from each of the three Alumni Associations of Columbia College, of the College of

Physicians and Surgeons, and of the School of Mines of Columbia College, was held October 22, 1894, at the residence of Mr. Pine, at which the formation of a University Alumni Association or Council was discussed; it was resolved to call a joint meeting of the three Alumni Associations on the evening of November 16th, and a committee was appointed, consisting of one member from each Association, namely, Mr. John B. Pine, Dr. Francis P. Kinnicutt, and Mr. William Allen Smith, to prepare a plan for a University Alumni Association or Council. On November 16, 1894, a joint meeting of Columbia Alumni resided in New York and vicinity was held in the Fine Arts Building, 215 West Fifty-seventh Street, at half past eight o'clock p. m., at which 450 were present. The expenses of notices, supper, etc. (\$611.40), were paid by the three Associations in the proportion of acceptances (590). The expense of the hall was provided for by the Trustees of the College. Addresses were made by President Low and by Professor Van Amringe, Dr. W. H. Draper, and Professor Chandler. Subsequently the several committees recommended a plan for the formation of a University Alumni Council, and on June 10, 1895, an agreement was entered into between the Association of the Alumni of Columbia College, the Association of the Alumni of the College of Physicians and Surgeons, and the Alumni Association of the School of Mines of Columbia College, by which agreement "The University Alumni Council of Columbia College" was formed. On October 30th following, the first meeting of the Council was held at the Hotel Savoy, and committees were appointed to draft by-laws and to make arrangements for a joint alumni dinner. On November 12, the Council met at the residence of Professor J. H. Van Amringe, adopted by-laws, and elected the following officers: Professor J. H. Van Amringe, Chairman, and Mr. William Allen Smith, Secretary and Treasurer. On December 16, 1895, a joint alumni dinner was held at Sherry's, at which all the Schools were largely represented, the number present being something over two hundred. On February 24, 1896, the

Council met at the residence of Mr. De Witt. The Standing Committee on Alumni Organization presented a form of circular letter to graduates in other States; a report was presented by the committee having charge of the joint alumni dinner held December 16, 1895; a resolution was adopted recommending a change of the name of the Council to conform to the action of the Trustees in adopting the title of University, and resolutions were adopted accepting the invitation of the Committee on Buildings and Grounds to the members of the Council to act as Marshals upon the dedication of the new site, and undertaking to arrange for a luncheon on Dedication Day. Subsequently about six thousand copies of a circular letter of notice of the dedication were issued, in the name of the Alumni Council of Columbia University, to the Alumni of Columbia College, of the College of Physicians and Surgeons, and of the Schools of Law and Mines, resident in New York and within about thirty miles of New York. On May 2d the members of the Council acted as Marshals, one of the members as Grand Marshal, at the dedication of the new site of the University, and a committee of the Council took charge of the luncheon.

The report concludes: "From the foregoing it will appear that the Council has already established itself as a prominent and influential factor in the life of the University, and gives promise of wider usefulness in the future. What has been done is perhaps only a suggestion of what may be done in carrying out the objects for which the Council was established: to extend the knowledge of the University and its work; to establish closer relations between the Alumni and the University, and to further such measures as, in its judgment, will tend to promote the interests of the University and its several parts."

At the same meeting the Sub-Committee on Organization reported that it had prepared a circular letter addressed to Alumni generally throughout the country, suggesting the establishment of local associations, and that several hundred copies of the circular, together with personal notes from the

members of the Committee, had been mailed. In most cases the circular was accompanied by a copy of the Locality Index. The committee reported that replies looking to the formation of local Alumni Associations had been received from graduates in the States of Connecticut, Colorado, California, Montana, Wisconsin, Minnesota, Michigan, Missouri, and Nebraska, and in Western New York; that Associations had been formed in the States of Connecticut and Colorado, and that sufficient interest had been evinced to justify the belief that continued efforts would result in the formation of a number of State Associations. The Committee requests that any Alumnus who may be inclined to assist in promoting the formation of a local Association will communicate with it.

MUSIC AT COLUMBIA

In formulating the courses of music at Columbia, the great difficulty seemed to be to decide between theory and practice; an ideal being one thing, and attainment quite another. The generally accepted idea of a university's sphere of work is that it should represent the highest attainable instruction, leaving to minor institutions the matter of preparatory training. To apply this theory to music is possible only to a limited extent, owing to the fact that there is little or no substratum of musical culture for what should be university work to build upon. Until the minor institutions include some preparatory musical training in their curricula, university work in the art must be something of a compromise, if it is to appeal to more than a very few.

Music occupies a peculiar position in our culture. Without having been generally recognized as an element of school or university training, it has succeeded in slipping into our lives without official recognition. The result is that it is studied seriously only by specialists. In other words, our doctors, lawyers, literary, and scientific men generally, know but

little of the art except that which comes to them through the medium of social intercourse. The most painful ignorance is often displayed by novelists and poets when they write of music, and but few learned men, even among the very greatest, have grasped the fact that in ignoring music they have deprived themselves of one of the most precious boons granted mankind. A man of great attainments once remarked to a friend of mine that he "understood music was pleasing to women and children, but to him it was not only a bore, but positively offensive." Now, it is shameful to our civilization that a university-bred man could display such ignorance. With painting, and perhaps sculpture, it is somewhat better, and a remark such as the above would hardly be ventured upon with reference to these arts; still, before a picture is bought nowadays an expert is generally consulted to determine its artistic value. This state of things is all the more humiliating, inasmuch as it is entirely unnecessary.

In university work proper instrumental and vocal instruction seems out of place as tending toward specialism. The proper place for this is a school of musical technology. If such a school could be under the control of a university, and have the influence of a university behind it, thus removing it from all business or personal considerations, it would be a powerful factor in the advancement of art in America; in fact, it would give art an advantage not enjoyed elsewhere in the world. A university has a wider and more generally cultured public to draw from than any conservatory can have, the latter attracting, as it does, only specialists. Beside those who would include music as an element of liberal culture, there are surely many among university students who would gladly specialize in music if the calling were presented to them and their advisers as one of dignity, and commanding serious and universal consideration. The same student now has to choose between the many outside conservatories if he wishes to specialize in music. This immediately takes him out of the pale of university work, thus prejudicing the minds of parents and guardians, who probably already have strong

opinions on the subject of a calling that to them seems vague in everything, except general good-for-nothingism. Such opinions are very excusable, considering the fact that music has never been recognized in our schools as an indispensable element of liberal culture.

In my opinion, our universities should establish schools of technology for the arts as well as for the sciences: the university work proper to consist mainly of original work in composition, of consideration of the higher art principles, history, and of the study of literature and the sister arts. In my opinion, music, painting, history, and literature, including languages, should be elements of liberal culture, elements that are also indispensable to the specialist in art. Architecture was once dubbed "frozen music;" poetry has melody; music has color; and all the arts possess in common what is vaguely called "feeling." This certainly sounds trite enough; still, I am firmly convinced that one art can learn more from another in a year than in a decade of delving into hidden causes and abstruse technic that belong in the domain of science. No music lover can appreciate or understand music to its full without a corresponding appreciation of the other arts. To the specialist an additional scientific training is indispensable and a school of technology is its proper sphere.

This is an ideal; attainment being, as I have said, a very different matter. At present, in Courses I and II the generalization of music will be attempted. In them I shall endeavor to explain, as far as is possible, its principles, history, and æsthetic potency, thus giving the student, for the most part, a non-technical survey of the subject. As a matter of fact, university work should commence (with certain reservations) at Course II, but until the minor institutions add the study of music to their regular curricula our courses must include much that is comparatively elementary. This also holds good in regard to Course III, which treats of simple harmony. As an auxiliary help to Course I, I trust the broadening influence of the independent series of lectures, forming Course VI, will be of great benefit.

Courses III, IV, and V, which include harmony, counterpoint, and composition, are designed for the specialist in music. Course V is specially directed to those who compose already. The work, aside from the technic of orchestration and symphonic forms, will consist mainly of original composition, aided by criticism and discussion from both technical and æsthetic standpoints. Courses I, III, and IV, I hope, may be the germ from which a school of technology may spring. As for a union of the arts in university work, it seems to need time before such a radical departure from all precedent were feasible. In the meanwhile, however, New York, with its wonderful art treasures, offers a substitute that it is difficult to overestimate. Our American nature is averse to pessimism, and undaunted hope, combined with a wonderful capacity for hard work, have made us what we are. It seems to fall to us by right of birth, as the youngest nation, to aspire to the highest and to break new roads. That this national characteristic must extend into our music is to me a forgone conclusion, and I trust the time is not far off when my opinion will be verified.

E. A. MACDOWELL

IN MEMORIAM

JOSEPH W. HARPER AND WILLIAM G. LATHROP, JR.

The University has sustained a severe loss in the death of two of its Trustees: Joseph W. Harper and William G. Lathrop, Jr. Both graduates of the College, they were alike in their devotion to its interests. The former, during his long service of twenty-three years, and the latter, even during his all too brief term of a single year, evinced an earnest love for the College by faithful and unremitting labor in its behalf. They were representative Alumni in the best sense of the term, proud of their *Alma Mater*, confident of her future, and eager to render her loyal service.

Mr. Harper was born in Brooklyn in March, 1830. His father was Joseph Wesley Harper, one of the founders of the famous publishing house of Harper Brothers. He graduated at Columbia College in 1848, and at the age of twenty, following the example of his predecessors, began his career in the composing room, mastering successively all the details of the craft of book-making. He became a member of the firm in 1869, succeeding his father in the management of the editorial department. In 1890 he became the senior member of the firm, from which he retired, chiefly on account of impaired health, in 1894. Throughout his active career Mr. Harper illustrated the sterling qualities of his forefathers and justified the motto which was inscribed by George William Curtis upon the wall of the private office, in the building erected as a memorial of the founders of the firm :

“ My flame expires, but let true hands pass on,
An unextinguished torch from sire to son.”

Mr. Harper was singularly fitted, by his genial and generous nature, his keen sense of humor, and his literary training, to become the friend of men of letters and the purveyor of their works. He was so kindly in his criticisms, so thoughtful and considerate of the feelings and circumstances of others, that he made the impression of a friendly counsellor rather than that of an unsympathetic man of business. Those who never had the pleasure of personal intercourse with him found his rare and attractive qualities reflected in his letters, which displayed in his friendly, as well as in his business, correspondence a delightful combination of sober judgment and picturesque humor, often enlivened by apt quotation from a memory well stored with classic lore.

Mr. Harper was for twenty years a Trustee of Columbia College. It is in this relation that he will be most affectionately remembered by his colleagues, by the members of the Faculty, with many of whom he had intimate relations, and by the Alumni, to whom he was known as a loyal and enthusiastic member of their Association. He was influential in

the election of Dr. Low to the Presidency of the College, and was always in cordial sympathy with the broad scope of the new administration. His death at this time is especially to be deplored. He had proved himself a wise counsellor and a cordial supporter of every measure which promised to strengthen and extend the usefulness and the fame of the University. He was always especially interested in the academic department of the University, and jealous of any encroachment upon its dignity and importance. He sometimes expressed the fear that it was being overshadowed by the interest which has grown up, in these later years, in the professional schools. It was partly this feeling which made him reluctant to have any change made in the title of the College, or any curtailment suggested in the undergraduate course. He loved the old College and the associations which clustered about the old name. He believed that a training in the humanities was a precious possession in any vocation and the best and surest foundation upon which to build a professional superstructure. He had a profound admiration for scientific attainments and technical skill in any department of human knowledge, but he loved the wisdom and the graces which the cultivation of language, literature, and historical studies gives to life and character. Mr. Harper was present, in spite of serious physical infirmity, at the dedication of the new site on the second of May, and it is certain that in the throng of proud and grateful Alumni of Columbia on that occasion there was no one whose spirit was moved with a keener sense than his of the joyful significance of the memorable scene on Morningside Heights. His devotion to the College was keen to the very last, and in his will he left it the sum of five thousand dollars, to be added to any endowment fund which might exist at his decease, or be thereafter created.

In his social relations Mr. Harper will be long remembered by all who came within the sphere of his attraction. His face shone with a kindly light that betokened good fellowship and warm human sympathy. With all the restrictions which his relentless disease placed upon him, he was always

a cheerful host, and no presence was more welcome, when occasion came for a postprandial "flash of reason and flow of soul." The suffering he endured for many years and the painful crippling of his limbs seemed rather to stimulate than to impair the delight he found in books and in intellectual companionship. To him was given in large measure the power to command the respect and affection of all who came to know him in the varied relations of his career. In him the torch with which he was entrusted by a noble sire burned with its wonted flame, and shed its genial rays through the broad paths and by-ways of his useful life.

Mr. Harper died on July 21, 1896.

William Gerard Lathrop, Jr., A.M., LL.B., was born in Rahway, New Jersey, August 24, 1841. He was graduated from Columbia College in 1862, and from the Harvard Law School in 1864. Mr. Lathrop was elected a Trustee in 1894. At the time of his death he was President of the Alumni Association of the College, of which body he had been one of the moving spirits for many years. His interest in Columbia amounted to devotion, and his death, so soon after his election as Trustee, is a serious misfortune. Short as his service in the Board had been, he had already proved his usefulness. His good judgment, his tact, and his energy impressed themselves on all who knew him, and promised to make him, in time, as influential as a Trustee as he had been in the Association of Alumni. He died at his home in Boonton, New Jersey, August 2, 1896.

The following memorial was adopted by the Alumni Association at its annual meeting on October 5th :

"The Association of the Alumni of Columbia College expresses its profound regret and sorrow at the death, last August, of William G. Lathrop, Jr., of the Class of '62, a Trustee of the University and President of this Association. No son of Columbia was more devoted to his *Alma Mater* than he, or had a loftier conception of his obligations as an Alumnus. His attachment to the College was fervid and his

confidence in her future was without any misgiving; his thought for her welfare was constant, and permeated with a hopefulness as to all her affairs that cheered and encouraged his associates; his efforts for her advancement were unremitting and wholly unselfish. He became President of this Association a year ago, and richly deserved the unsought distinction. For many years before the Association thus honored itself and him he was a guiding spirit in its counsels, and much of its attractiveness and usefulness was due to his wise forethought and care. The frequent social meetings and their success owe very much to his initiation and supervision; the fine athletic field at Williamsbridge was acquired largely through his efforts, was prepared for use chiefly under his direction, and was judiciously administered by him at great expense of time and labor, which he ungrudgingly bestowed. Nothing that concerned the College or this Association was foreign to him.

“Candid and generous in disposition, solid in acquirement and safe in judgment, a capable, high-minded, and thoroughly trusted lawyer, a good citizen, a sturdy friend, an upright and God-fearing man—his loss is a most grievous one to the College, with whose enterprises he was so intimately connected, and to this Association, in which he was so conspicuously useful.”

UNIVERSITY NOTES

THE COLLEGE

The students registered in the College for 1896-97 number 299, of whom 98 are Freshmen, 61 Sophomores, 49 Juniors, 51 Seniors, and 40 Special Students. The Freshman class shows a gain of 32 over that of last year.

Alumni who possibly feel that the College is somewhat lost in the remarkable development of the professional schools of the University, and perhaps fear that College “spirit” and loyalty may be weakened by the very means that are wisely

used to further the purposes of University culture, will be reassured by learning that every branch of social and literary activity among the students in College gives evidence of renewed life. The *Spectator*, which has long won a reputation among college journals for its frankness of expression and its vigorous tone, is now published every week, instead of every fortnight. The younger *Literary Monthly*, whose ambition is less journalistic, has this year appeared in a more attractive form, and has no difficulty in filling its pages with very creditable and well edited matter. The young *Morningside*, without trenching on the field of the *Spectator*, is winning for itself, by a lightness of touch and seriousness of feeling that is characteristic of the College, a permanent place in the regard of the undergraduate community. The debating societies are well attended, and are widening their field of interest. The mere "loafer," never a familiar figure at Columbia, the man who deliberately neglected his College duties, has almost entirely disappeared, and anyone in a position to observe carefully the character and actions of undergraduates at Columbia within the last few years must be struck by a distinct deepening of the interest students show in each other, by the more orderly and rational management of undergraduate affairs, and by the steady growth of interest, energy, and ambition in all that pertains to the College community.

The annual meeting of the Association of the Alumni of the College was held at Sherry's on Monday, October 5th, and was largely attended. The following officers were elected: President, Nicholas Fish, '67; Vice-President, Edward Mitchell, '61; Treasurer, Theodore F. Lozier, '76; Secretary, William T. Lawson, '82. The following were elected members of the Standing Committee: Guy Richards, '87; E. S. Rapallo, '74; T. L. Chrystie, '92; Charles H. Mapes, '85. The usual reports were presented, and memorials of the late President and Secretary of the Association were adopted. The memorial of Mr. Lathrop is published on another page. The meeting was especially interesting as a social gathering, and was remarkable for the

large attendance of the younger Alumni. A large proportion of the last graduating class joined the Association. It is understood that the Committee on Reunions has in contemplation a series of informal social meetings, to be held during the coming winter. Much interest was shown last winter in the addresses made at these meetings from time to time upon the current work of the University, and it is to be hoped that this usage, which affords the most satisfactory means of keeping the Alumni informed as to the progress of the University, may be continued.

The following is the text of the letter from Professor Brander Matthews, Mr. Laurence Hutton, and Mr. H. G. Paine, offering to the Trustees a fund for the H. C. Bunner Gold Medal:

“The late Henry Cuyler Bunner was prepared for Columbia, although he never entered the College; and now certain of his friends wish to found a prize in the University that his memory may be there kept alive.

“On behalf of those who have subscribed for this purpose, we beg leave to hand you herewith a check for the sum of one thousand dollars, which sum we request the Trustees to accept and invest, so that the income may provide every year ‘The H. C. Bunner Gold Medal,’ to be given to the student who shall present the best essay on an assigned subject in American Literature.”

FACULTY OF APPLIED SCIENCE

The School of Architecture.—The subjects of the graduating theses of the Fourth-Year Class are: a Savings Bank, a Students' Club House, a Theatre, a School of Fine Arts, a City Hall, a Renaissance Church, an Office Building, a Railway Terminus, an Institute of Natural Sciences, a Country Mansion, and a Country Club. The sketches for these theses have this year been made a part of the summer work, in lieu of a memoir, and instead of the sketches and notes required of the lower classes the Fourth-Year students have this summer prepared written essays of four or five thousand

words. The subjects of these papers are Notes of Travel, House Painting, Iron and Steel Construction, Fire-proof Floors, Bramante, the Preservation of Stone, Deep Foundations, the Ecole des Beaux-Arts, Fresco Painting, the Alhambra, Glass and Mosaics, the French Renaissance, Cements. After criticism and correction these papers will be read before the class and are to be followed by similar essays during the winter, each student preparing half a dozen as part of his regular work in History, Design, or Construction. Each member of the three lower classes also presents each week a written report of some one of the lectures he has attended during the week, the subjects being taken in turn. The time gained by dropping Physics, Chemistry, and Geology from the course is partly occupied thus in the practice of English composition, and partly by a course of lectures on Building Materials, in which the instruction in Applied Chemistry and Geology, as far as it was pertinent to the study of Architecture, is now incorporated.

One member of the Fourth-Year Class has elected the course in Engineering and Practice, under Mr. Snelling, and will next year take the Fourth-Year course in History and Design as a post-graduate student. A graduate of last year's class is also taking the course in Engineering and Practice and will be the first student in the school to complete the full five-years' course which it offers.

The afternoons of the first month of the year have been devoted by the three older classes, as for two years past, to out-of-door work in measuring and drawing from buildings in various parts of the city. This fall the buildings to be thus studied have been selected with special reference to the lectures and research in the mediæval styles. The students, divided into groups of three, are each required to study and measure a Gothic or Romanesque door, window, spire, and whole façade, and to make sketches, full-size profiles, and scale details of the object studied. This work is mostly done with T-square and triangle on the spot.

A History of Architecture by Professor A. D. F. Hamlin

was published in March by Messrs. Longmans, Green & Co., in their series of College Text-books on the History of Art, edited by Professor John C. Van Dyke, of Rutgers College. The second edition is in preparation and will be issued in a few weeks. The paper upon the teaching of architectural history, contributed by Professor Ware to the November (1895) number of the *School of Mines Quarterly*, was followed in May and July by two papers upon Architectural Drawing, illustrated by reproductions of work by members of the School. These have been printed together in a pamphlet for distribution.

Organic Chemistry.—Mr. M. T. Bogert has been for some time engaged in investigating the synthesis of certain new organic sulphur compounds, and has recently given an account of some new compounds of the Heptyl series, four of which do not seem to have been before described, in a paper read before the New York Section of the American Chemical Society.

Analytical Chemistry and Assaying.—The publication of the schemes for qualitative analysis by Drs. J. S. C. Wells and A. R. Cushman have contributed materially to the course of instruction in such analyses, and their use during the past year has demonstrated the benefit of placing in the hands of students condensed notes for use while working at their desks. Changes have been made in the course in assaying by the introduction of laboratory tests on ores to determine the percentage of extraction of the precious metals by the chlorination, cyanide, bromide, and Russel processes, including assays of original, roasted ore and tailings, also precipitation and recovery of the gold and silver extracted. The laboratory work in assaying has also been re-arranged so as to involve comparison by the students of the various methods used. It is satisfactory to note a large increase in the number of students in assaying, several of whom are graduates of other institutions.

During the summer Professor Ricketts and Dr. Miller have been busy in preparing a text-book on assaying, which in-

cludes, besides the latest practice in making fire assays, many of the rapid volumetric methods used in the West. Mr. H. C. Sherman, Fellow in Chemistry, is investigating methods for the determination of starch. Dr. Miller and Mr. Mathews are investigating the ferro-cyanides of zinc and manganese.

Summer Schools.—The summer school of mining was held in the copper and silver district of Butte, Montana, which is exceptionally well adapted for purposes of instruction, both in mining and metallurgy, on account of the size and number of mines in and around Butte, and their large output. Most of the properties are being worked at depths of 1,300 to 1,400 feet, under the most approved methods and with powerful and costly machinery. About four weeks was devoted by Adjunct Professor Peele to the mining session proper, which was preceded by a week of useful practice in field geology under the direction of Professor Kemp, and followed by a week of special study of the various metallurgical works with Dr. Struthers—a coöperation of the Departments of Geology and Metallurgy which adds materially to the usefulness of the Summer School.

The summer school of practical metallurgy, under the supervision of Dr. Struthers, was held at Butte, Montana, directly after the time devoted to the mining school. The subject studied was the smelting of silver and copper ores. Visits were made to all the smelters in that district, and the mammoth plant at Anaconda, which treats about four thousand tons of ore daily, was kindly thrown open for inspection, including the department devoted to the electrolytic refining of copper. The students received personal and class instruction, and were required to prepare a complete description of all the works visited. The description called for an outline of works and processes, sketches of all furnaces, in part and in whole, involving plans, sections, and elevations; and a description of the chemistry of the process and the mechanical handling of ores and products. Note books were freely employed, and were corrected and criticised before the following

morning, while the subjects were fresh in the minds of the students. It is to be hoped that this new feature of the course will become a permanent one.

FACULTY OF MEDICINE

(College of Physicians and Surgeons)

The present college year begins the third year in the new curriculum at the College of Physicians and Surgeons. It will be recollected that the new curriculum extends through four years; hence those who graduated at Commencement in May, 1896, were men who were under the old curriculum and had finished their course in three years. As the present class is in its third year of the four-years' course, there will be no regular graduating class in May, 1897, in the College of Physicians and Surgeons. A certain number of students, however, who, for various reasons, failed to take their degree in May, 1896, may come up for examination in May, 1897. About twenty-five such men are at present in the College. The development of the new curriculum has required an increase in the force of instructors, and a greater amount of work has been thrown upon the instructors already connected with the College. The following gentlemen have been appointed in the various departments: In Physiology, Reid Hunt, Ph. D., M. D., Instructor; in Chemistry, Benjamin M. Jaguish, B. S., and George Muller, Ph. D., Instructors; in Medicine, F. W. Jackson, M. D., Clinical Lecturer, and Van Horn Norrie, M. D., and William K. Draper, M. D., Clinical Instructors; in Gynecology, Wm. S. Stone, M. D., Instructor; in Ophthalmology, John H. Claiborne, M. D., Instructor; in Otology, Robert Lewis, M. D., Instructor; in Anatomy, Walton Martin, M. D., and C. C. Carmalt, M. D., Assistant Demonstrators; in Surgery, C. I. Barker, M. D., and A. B. Johnson, M. D., Instructors; in Histology, O. S. Strong, M. D., Ph. D., Instructor.

The following gentlemen have been appointed Fellows: Frederick J. Brockway, M. D., Richard H. Cunningham, M. D., Philip H. Hiss, Jr., M. D., and James Ewing, M. D.

The serious illness of Professor Peabody has incapacitated him from giving his lectures in Therapeutics and Materia Medica, though it is hoped that he will be able to resume his work by the 1st of January. His place has been filled by Dr. Henry A. Griffin, who graduated with first honors at the College of Physicians and Surgeons in 1889, has been a prominent quiz-master in the city, and is the author of a recent text-book on Materia Medica. It is understood that his lectures have been very successful.

A number of changes in the courses of instruction have been made this year, but as these are fully described in the catalogue they do not require any detailed mention. The general object of the new method of instruction is to do away with general lectures, and to increase the amount of laboratory and clinical instruction, in the course of which the student comes into direct contact with the instructors. This new method is of special service in the clinical study of medicine and surgery, inasmuch as it enables each student to examine for himself a large number of patients and to observe symptoms very closely under the direction of the teacher. The number of hours devoted to the study of physical diagnosis in the Department of Medicine, that is, the examination of heart and lungs, has been doubled, and the number of hours devoted to instruction in Minor Surgery has also been materially increased. In these departments and in the departments of skin diseases, eye and ear diseases, diseases of the throat, and of children and of women, the large class has been divided up into small sections of twelve to fifteen men each, and attendance upon this sectional instruction has been made compulsory, so that no students can avoid attending these special clinical courses under the direction of the Chiefs of Clinic and the instructors in each department. Such courses have been optional hitherto, and under the old curriculum the student did not have time to attend more than a few. At present the hours are so arranged that each student is able to attend not only the general clinics held by the professors in the various departments, but also these courses of

special instruction given by the Chiefs of Clinic and the instructors at the Vanderbilt Clinic. Such clinical instruction would be impossible were it not for the very large amount of clinical material offered by the Vanderbilt Clinic, but as the new accommodations at the Clinic afford ample space, and the number of patients attending has been largely increased this autumn, there is no want of teaching material.

An additional surgical clinic has been opened at the Vanderbilt Clinic and is conducted by Professors Weir and Bull, thus giving two hours a week instead of one of such clinical instruction. The hours of work have also been arranged so as to allow the students to attend the surgical clinics at the New York Hospital held by Professor Weir, and the ophthalmological clinics at the Hospital of Eye Diseases by Professor Knapp, and these clinics have thus far been crowded. It is evident already that the students appreciate fully the greater opportunities offered in these courses, for all the classes are fully attended.

The total number of students registered in the College of Physicians and Surgeons up to November 1st was 625, of whom there are in the first year 279, in the second year 158, and in the third year 147. The remainder includes those who were left over from the three-year curriculum and a number of special students.

During the summer the laboratories of the Department of Physiology underwent considerable changes. The general laboratory was enlarged and its equipment of apparatus was extended; another private room, a small laboratory for histological research in connection with physiological problems, and a demonstration and lecture room, were added. The Department now occupies all of the third floor on the south wing of the College of Physicians and Surgeons, and a partition has been built between this space and the main hallway. The enlargements were much needed, and the capacity of the new laboratories is already overtaxed by numerous applicants for practical instruction. A number of new pieces of recording apparatus and several new microscopes were added

to the Swift Cabinet during the summer. The teaching staff has been enlarged by the appointment of Reid Hunt, M. D., Ph. D., who received his special training at the Johns Hopkins University, as tutor in physiology. A Journal Club for the review of current physiological literature has been organized among the members of the teaching staff and the advanced workers.

The Department of Pathology enters this autumn upon the full possession of the new quarters which the largely increased demand upon its resources required. The removal of the Department of Anatomy from its old laboratory in the North Wing has left this free to be joined to the other laboratories of the Department of Pathology, and it is now used as a preparation, injection, dissection, and machine room. A most efficient cold storage plant, for pathological material, has been arranged during the summer.

A new and much valued feature in the Department of Pathology is the Library, in which are to be found all of the important current journals relating to pathology, bacteriology, and closely allied themes, together with a limited number of standard text-books and reference books. It is hoped that ultimately this departmental library may be supported by the University, but at present it is maintained by the instructors and special workers in the pathological department, who have contributed between three and four hundred dollars during the year for this purpose.

The most prominent new feature which the third year of the new curriculum develops in the Department of Pathology is the demonstration, by Dr. Hodenphyl, of pathological material. This demonstration course is well under way, and is deservedly popular on account of the great practical value which attaches to the actual inspection, in a fresh condition, of a great variety of lesions. The coöperation in this work of Dr. John S. Thatcher, of the Presbyterian Hospital, is of great value to the Department.

The advantages of the new curriculum are nowhere better illustrated than by the improved opportunities for teaching

the physical diagnosis of the heart and lungs. This practical course has been extended to thirty-two demonstrations, instead of twenty as in previous years—a change which enables the instruction to be more complete and thorough. The opening of morning medical classes in the Vanderbilt Clinic has increased the attendance of patients to such an extent that the mass of clinical material available for teaching purposes has not only been more abundant, but more evenly distributed throughout the teaching hours. The demonstration room is large, well ventilated, and admirably adapted for clinical instruction.

FACULTY OF PHILOSOPHY

Professor Egbert's *Introduction to the Study of Latin Inscriptions*, published in May last, will be used in the American School of Classical Study at Rome as the text-book in Latin epigraphy. An English edition of the work is being prepared by Longmans, Green & Co.

Dr. Young, of the Greek Department, spent the summer in the museums of Paris, London, Munich, and Berlin, gathering photographs and other materials for his courses in Greek art and in the manners and customs of the Greeks.

A special set of lantern slides is being prepared for the Department of Indo-Iranian Languages, to be used in illustrating certain lectures which the department is planning to give later in the winter.

By invitation of the University of Chicago, Prof. A. V. Williams Jackson delivered an address last July at the opening of the Haskell Oriental Museum. Dr. Jackson has also been invited to make an address on Archæology and the Bible at the Church Congress to be held, November 17-20, in Norfolk, Virginia.

If there should be a demand made on the part of competent students Dr. Woodward may conduct the two-hour course in Rumanian, previously offered by Professor Cohn, for advanced students. The requirements for admission will be knowledge of Latin, French, and one other Romance language (preferably Italian), and ability to read German.

Professor Wilhelm Dörpfeld, the distinguished German archæologist, gave six lectures during November, before large University audiences, on Troy and the Homeric Citadel, the Excavations at Olympia, the Greek Theatre, the Most Recent Investigations in Greece, the Acropolis of Athens, and Tiryns and Mycenæ.

The Oriental side of the Library has become the beneficiary of a gift of six thousand dollars from the family of the late Alexander I. Cotheal, Esq., the income of which is to be used for the purchase of books in the Oriental languages or relating to Oriental countries. This fund is to be known as the "Alexander I. Cotheal Fund for the increase of the Library." Mr. Cotheal was born in New York City in 1804. He was the eldest son of Henry Cotheal, and grandson of Isaac Cotheal of Revolutionary times. Through his connection with the Zanzibar trade he became interested in the Orient, and in 1851 made a journey to the east coast of Africa, Zanzibar, and Mozambique. He was one of the earliest members of the American Oriental Society, and was one of its directors for more than a quarter of a century. His chief subject of study was the Arabic language; and, at the request of the late Sir Richard F. Burton, he made a translation from a rare Arabic text, which Sir Richard incorporated in the sixth volume of his *Supplemental Nights*. Mr. Cotheal was also a student of Turkish, Persian, Hindustani, and Gujerati. During his lifetime he showed his appreciation of the importance of the study of Oriental languages in our universities by giving his valuable collection of Arabic, Turkish, and Persian manuscripts to the Columbia Library. At the time of his death also, in 1894, his family presented to Columbia a collection of books from his library bearing upon subjects connected with the East.

To the Hebrew MSS. already in the Library of the University, another lot of eight has been added. Professor Gottheil has been enabled to purchase them through the generosity of Mr. W. Walter, '81. A few years ago, Mr. Walter made a similar gift to the Library.

The Rev. Mr. Lau, an advanced student in the Department of Oriental Languages, is continuing the work done last year by Dr. W. R. Arnold in the deciphering of the old Babylonian clay tablets belonging to the University Library. It is hoped that he will shortly be able to publish his results.

In the July number of the *American Journal of Semitic Languages*, Professor Max Margolis (Ph.D., Columbia, 1891), Fellow in Semitic Languages, 1891-92, has an extensive article on Comparative Semitic Grammar. In the October number of the same journal, Professor C. Levias (M.A., Columbia, 1894), Fellow in Oriental Languages, 1893-94, publishes the first part of a larger work on the Aramaic Idiom contained in the Babylonian Talmud.

Professor Brander Matthews's *Aspects of Fiction and Other Ventures in Criticism*, recently published by Harper Brothers, is the first volume of a series of collected essays of contemporary American authors, including Mr. Howells and Mr. Warner. It contains his address on *American Literature*, delivered last July before the National Educational Association.

The Romance Club, composed of all the instructors and advanced students of the Department of Romance Languages and Literatures, will continue, as heretofore, to meet fortnightly throughout the year. The meetings of the Club are intended primarily for the examination and discussion of current periodicals and new books appearing in the Romance field; but social intercourse is made a prominent feature, with a view to bringing instructors and students into closer personal relations.

Professor Todd was engaged during the past summer in the preparation of a critical edition of a portion of the text of *Don Quixote*, with an introduction and annotations.

Professor Cohn sailed for Europe in July last to spend abroad his year's leave of absence. He divided the summer months between the coast of Brittany and the Ardennes mountains and expects to take up his residence for the winter in Paris.

Dr. B. D. Woodward spent part of the summer in language study near Bucharest, in Rumania.

The annual series of weekly lectures in French on topics of public interest, open without cards to all members of the University or affiliated institutions, will be given in room 15, Hamilton Hall, from 3:30 to 4:30 on Thursday afternoons throughout the year, under the auspices of the Department of Romance Languages and Literatures. The name of the lecturer and the topic will be announced one week in advance, and published through the official University bulletin on the Monday preceding the lecture. The course will be opened on Thursday, December 3d, with a lecture by Dr. B. D. Woodward, "On a Recent Visit to Rumania: I.—The Country and its History."

No promotion could have given more pleasure to the teaching force of the College and the School of Philosophy than that of Professor Speranza, whose warm-hearted and generous character, no less than his scholarship, has won for him the sincere regard of his colleagues as well as made him a favorite with his students. Professor Speranza's acquaintance with the Romance languages is broad and sympathetic, and his earnest and faithful work as a teacher has been well known at Columbia since 1883, when he first became connected with the College as instructor in Italian—a post forever memorable among us from its association with Lorenzo da Ponte, poet and scholar, the first to introduce into America the study of the language, literature, and culture of Italy.

FACULTY OF POLITICAL SCIENCE

Professor Seligman has been elected a corresponding member of the Russian Imperial Academy of Science, an honor not frequently conferred on foreigners.

Two members of the Faculty of Political Science are to contribute to the series of books edited by Professor Hart, of Harvard, and to be known as the American Citizen Series. Professor Moore is to write on American Foreign Relations, and Professor Seligman is to contribute a work on the Elements of Political Economy, with special reference to American conditions.

Ginn & Company have republished, in a thick pamphlet, the recent articles on monetary questions from the *Political Science Quarterly*.

Professor Osgood has recently published, in the *Political Science Quarterly*, two articles on the *Corporation as a Form of Colonial Government*. A third on the same subject will appear in the December number of the same review. His paper on the *Classification of Colonial Governments* will appear in the forthcoming Report of the American Historical Association for 1895.

Mr. Wm. R. Shepherd has completed his thesis on the *History of Proprietary Government in Pennsylvania*, and it has just been published as volume VI of the *Studies in History, Economics, and Public Law*, edited by the Faculty of Political Science. Mr. Harry A. Cushing's thesis on the *History of the Transition from Provincial to Commonwealth Government in Massachusetts* will form a part of volume VII of the same series. A paper by Mr. Cushing will also appear in the forthcoming Report of the American Historical Association, on the *Political Activity of the Massachusetts Towns during the American Revolution*. A thesis by Mr. Henry Crosby Emery on *Speculation on the Stock and Produce Exchanges of the United States* forms the second and concluding number of volume VII of the *Studies*.

FACULTY OF PURE SCIENCE

With the close of the last academic year Nathaniel L. Britton, Professor of Botany and Secretary of the Faculty of Pure Science since its organization in 1892, tendered his resignation in order to assume the duties of scientific director of the New York Botanical Garden. In the withdrawal of Professor Britton the University loses from its working staff an accomplished instructor and investigator, whose indefatigable labors have been of signal service to the School of Pure Science. It is, therefore, gratifying to note that he has been made Professor Emeritus of Botany, and that his official connection with the University will thus be maintained.

The growing importance of the many-sided science of anthropology has naturally led to its development in all of the graduate schools of the University. At the close of the last academic year Dr. Franz Boas was appointed Lecturer in Anthropology under the Faculty of Pure Science. Dr. Boas is well known for his researches in ethnology, and his connection as Curator with the American Museum of Natural History affords him and his students special facilities for laboratory investigations. He is conducting this year two courses of study on Physical Anthropology, and, in addition, a seminar on the North American Languages.

At the beginning of the present year the number of courses offered by the School of Pure Science was enlarged from 140 to 158. By the plan of alternation of courses now commonly adopted by departments, it will be possible to give all of these courses in two or three years. The number of courses actually given in the School of Pure Science during the last academic year was 81.

Professor William Hallock, of the Department of Physics, has been elected to succeed Professor Britton as Secretary of the Faculty of Pure Science.

Department of Astronomy.—The summer class in Practical Geodesy, under the supervision of Professor Rees, was divided into two sections. Section I remained at the Observatory in the City for three weeks, during which time Section II was at Sunapee Lake, N. H. At the end of three weeks the sections changed places. The field work at Sunapee was³ under the direction of Professor Jacoby, assisted by Messrs. Derleth and Rodenberg, '96. The work in the City was practically under the charge of Dr. H. S. Davis, assisted by⁴ Dr. Ling and Mr. Kretz, '96. Professor Rees continued the observations for variation of latitude through the summer.

The Department has received a new measuring micrometer for astrophotographic work, made by Repsold & Sons, of Hamburg. This instrument embodies new improvements, several of which were devised by Professor Jacoby. Two

other machines have been constructed according to the same model for the observatories of Vassar College and the University of Minnesota.

Through the generosity of friends, the Department has been able to secure the services of a computer at the Observatory. Miss F. E. Harpham, A.B., of Carleton College, has been appointed to this position.

The *Astronomische Nachrichten* of October 8th contains an article by Dr. Marcuse, of Berlin, in which he describes a method of studying the variation of latitude by means of a new photographic zenith telescope. It may be of interest to note that for the purpose of standardizing his new instrument Dr. Marcuse made a number of photographs of the Pleiades. For the definitive positions of the stars in this group Dr. Marcuse adopts the mean of the Yale heliometric triangulation by Dr. Elkin and the Rutherford photographic determinations, as deduced by Professor Jacoby. It will thus be seen that Mr. Rutherford's researches are being made the basis of further investigations in an entirely different department of astronomy. Dr. Marcuse further calls attention to the comparison made, by Professor Jacoby, of the Rutherford results with the heliometric ones of Bessel and Elkin. This comparison he considers to have a very important bearing on the question of the possibility of employing photographic zenith telescopes for the study of the variation of terrestrial latitudes.

At the close of the summer work in Geodesy and Practical Astronomy Dr. Davis left for Europe to consult with certain astronomers regarding a new reduction of all Piazzzi's star observations, and to visit some of the principal observatories. Unfortunately many of the astronomers had gone to view the solar eclipse within the Arctic Circle, but the observatories of Brussels, Bonn, Munich, Genoa, Milan, Turin, Geneva, Berlin, and Greenwich were visited; also the "Tribuna of Galileo" at Florence and the places of Galileo's triumphs at Pisa. At Milan Piazzzi's manuscripts were carefully examined, and at Turin arrangements were made with

Professor Porro, Director of the Royal Observatory, for his coöperation in the proposed work. At Berlin Dr. Davis was most fortunate in securing conferences with Professor Auwers concerning methods and plans of the new reductions. Professor Auwers' wide experience in all matters pertaining to this branch of astronomy rendered these audiences unusually profitable.

Department of Botany.—Professor Lucien Marcus Underwood, the new incumbent of the chair of Botany, has been for nearly twenty years engaged in teaching, first in academic work, then as Professor of Geology and Botany in Illinois Wesleyan University, and afterwards successively in Syracuse University (his *alma mater*), De Pauw University, and the Alabama Polytechnic Institute. His special line of study and research is Cryptogramic Botany, especially of the ferns of America, Hepaticæ, and Hymenomycetous Fungi. Professor Underwood was a delegate to the International Botanical Congress of 1892, Director of the Biological Survey of Indiana (1893-95), President of the Botanical Section of the American Association for the Advancement of Science (1894), has travelled widely in the pursuit of his profession and is the author of many important articles in various scientific journals and of the following works: *Our Native Ferns and their Allies*, 1881-1896; *Descriptive Catalogue of the North American Hepaticæ*, 1884; *Hepaticæ*, in *Gray's Manual of Botany*, 1890; *Pteridophytes*, in *Coulter's Flora of Texas*, 1894; *Pteridophytes*, in Britton and Brown's *Illustrated Flora*, 1896; *Illustrative Fungi*, 1889; *Hepaticæ Americanæ Exsiccataæ*, 1887-1896; *Index Hepaticarum*, 1893.

The Botanical Department has been strengthened by the appointment, as instructor at Barnard College, of Mr. Herbert Maule Richards, Sc. D., who thus holds *ex officio* an appointment in the University. Dr. Richards is a graduate of Harvard, where he also received the doctor's degree, and during the past year has held a travelling fellowship from Harvard University, studying chiefly at Leipzig. His spe-

cial line of work is largely physiological, mainly among cryptogams.

Dr. Carlton C. Curtis spent the summer visiting the principal physiological laboratories in England and on the Continent, returning just before the opening of the University.

Department of Geology.—At the Summer School of Mining and Geology, which was held this year at Butte, Montana, Professor Kemp gave the introductory work in surface geology, and then, with several students, made a collecting trip to and beyond Leesburg, Idaho, securing some valuable additions to our series of rocks from this little known region. During July and August Professor Kemp was at work in the Eastern Adirondacks for the United States Geological Survey, in detailed mapping of the Elizabethtown atlas sheet. In August he was accompanied and assisted by Mr. D. H. Newland, Fellow-Elect in Geology, and in September by Mr. John D. Irving, graduate student. The full study of this very complex region will be a somewhat protracted task, but will yield very interesting and valuable contributions. As the result of the earlier summer's travel, very valuable additions have been made to our photographic and stratigraphical collections, which have now far outgrown our present capacity for arrangement. The additional space that will be afforded by the new site is awaited with impatience. The Department is especially indebted for aid and gifts to Professor Frank C. Smith, of the School of Mines at Rapid City, S. D., and to our old students, W. D. Thornton, of Butte, Mont.; H. H. Armstead, Jr., of Yellow Jacket, Idaho, and Heinrich Reis, of New York, to whom it takes this opportunity of expressing its acknowledgments.

During the summer Mr. Hollick and Mr. Newland explored the serpentine area of Staten Island, for the purpose of obtaining observations and material to assist Mr. Newland in his thesis on the subject. Two minerals not before recorded from Staten Island were among the material collected. Valuable observations were made, which, it is hoped, may assist in the solution of the problem as to the origin of serpentine.

Mr. Hollick also visited the clay marl exposure at Cliffwood, N. J., where new and interesting fossils were obtained, and made a reconnoissance of Block Island and Montauk Point, in both of which places interesting material was found. The first recorded proof of the existence of Cretaceous strata on Block Island was one of the results of the trip. Mr. Hollick has recently been appointed, by the New Jersey Geological Survey, to examine and report upon the relation between the geological formations and the distribution of vegetation throughout the State.

During a portion of the month of July Mr. van Ingen, in company with Mr. Stuart Weller, of the University of Chicago, was engaged in studying the Paleozoic rocks that outcrop in the vicinity of Batesville, Independence County, Arkansas, a region that has become noted through the extensive deposits of manganese ore found in the vicinity and also for the great profusion of interesting invertebrate fossils that may be secured there. Observations made indicate that the horizon of the manganese bearing stratum is in the early part of the period of Silurian (Niagaran) submergence of the region. Large and valuable collections of invertebrate fossils were also obtained from the Ordovician, Silurian, and Carboniferous rocks.

Department of Mathematics.—Mr. Edwin Mortimer Blake, Ph. D., Columbia, 1893, has been appointed to an instructorship of mathematics at Purdue University.

Mr. George Herbert Ling, Ph. D., Columbia, 1896, has been appointed instructor in mathematics at Wesleyan University.

The University Library has been able, at last, to complete its file of the very important journal *Mathematische Annalen*. The only mathematical journal of importance of which the University Library does not now possess a complete set is the *Annales de mathématiques pures et appliquées*, published by Gergonne between 1810 and 1831.

The work *Higher Mathematics*, edited by Professors Mansfield Merriman and R. S. Woodward, which was recently

published by John Wiley & Sons, contains a chapter by Professor Fiske upon "Functions of a Complex Variable."

The Department of Mathematics has organized for the current academic year a "colloquium" or series of meetings for the consideration of various mathematical topics. These meetings will occur at intervals of about three weeks, the whole number to be held being ten. At each meeting lectures, essays, or reports will be expected either from graduate students or from instructors of the department, and in connection with each communication a general discussion will be invited. Every graduate student engaged in study or investigation under the direction of instructors of the department is expected to contribute at least one piece of work to the "colloquium."

Department of Zoölogy.—The chief change in the staff of the Zoölogical Department is the promotion, to an Adjunct Professorship, of Dr. Bashford Dean. During the five years since Dr. Dean was appointed instructor he has published thirty-two papers and memoirs upon the embryology and palæontology of Fishes, besides completing his volume *Fishes, Living and Fossil*, in the Biological Series. He has studied in the Naples Station, visited and reported upon all the marine laboratories of Europe, presented papers before the British Association at Ipswich and the International Zoölogical Congress at Leyden, and has made a number of expeditions for rare embryonic material in distant parts of this country, concluding with the highly successful work of last summer upon the Pacific Coast.

The chief work of the past summer was the establishment of a biological laboratory at Port Townsend, Washington, for the purpose of collecting material for the museum, teaching equipment, and research studies of the Department of Zoölogy. To send the first collecting trip of the department to so distant a region as the Pacific Coast was a formidable undertaking, and it would not have been possible had not a large part of the expense been generously met by friends of the University, mainly members of the Board of

Trustees. These subscribers included Messrs. F. A. Schermerhorn, Cornelius Vanderbilt, H. F. Osborn, Miss Susan Dyckman, Messrs. N. B. Cutting, A. L. Kean, J. W. Harper, H. H. Camman, Alfred Pell, S. P. Nash, G. L. Rives, and Bashford Dean.

The collecting party, consisting of Dr. Dean, G. N. Calkins, N. R. Harrington, and B. B. Griffin, left New York early in June and proceeded directly to Port Townsend, a point which had been selected on account of its nearness to the rich collecting ground of Puget Sound. Here they secured a small building overlooking the water, and equipped it as a laboratory. They also hired a small launch whenever the needs of dredging required. The first excursion proved that no mistake had been made in the choice of locality, and the work was carried on actively for upward of two months, yielding a large collection of the marine fauna of the Sound, taken within a radius of thirty miles. This material is now being systematically arranged in the Fifty-ninth Street laboratory, and is brought into immediate use in the courses of instruction. The embryological side of the collection proves of the greatest value, for the party was especially successful in securing the developmental stages of rare and important forms. Thus Dr. Dean succeeded in obtaining the first embryos known of the isolated shark-like *Chimæra*, a form which he had tried in vain to secure three years ago in the Mediterranean. For these stages, however, he was finally obliged to visit the coast of California, in the region of Monterey. Here, too, he was successful in securing the young stages of a myxinoid, adding to the collection over a hundred embryos. These are of the greatest scientific value; they have been sought for in vain during the past quarter of a century by such embryologists as Balfour, Cunningham, Beard, and Retzius, and in this country by Ayers, Ritter, and Price, the last, however, succeeding in securing three stages.

Mr. Calkins had the good fortune to collect the developmental stages of *Lucernaria*, the first known to science. He was also successful in obtaining many stages of the important

mesozoön *Dicyema*, the possible connecting link between the colonial Protozoa and the Cœlenterata. And in his collecting trips, which included a brief journey to Alaska, he has obtained in quantity for cytological studies such forms as *Noctiluca*, Acinetans, Foraminifera, and marine ciliates. Mr. Harrington has also secured one of the most important series of the summer in the embryology of *Eutoconcha*, a mollusk parasitic in the sea-cucumber, much discussed as to its relationships. His summer's work includes a large collection of Annelids, Echinoderms, and Arthropods, and a very valuable series of plankton from deep water. His collecting trips included five to the shores of the Pacific, eighty miles westward of Port Townsend. Mr. Griffin added to the collection about fifteen species of Nemerteans, many of which prove to be new species. Nearly every specimen of mullusk and platode in the laboratory has been due to his work. Professor Francis E. Lloyd, of the Pacific University, Oregon, was associated with the party for several weeks, and he is now working up his material as a post-graduate, studying especially the burrowing habits of *Pholadidea*, the rock oyster of the Pacific. The laboratory also had a visit during the month of August from Professor Osborn, who, in company with Professor Muir, was on a journey to Alaska.

Eight teachers and students of the department were engaged at the Marine Biological Laboratory, Woods Holl, Massachusetts. Dr. O. S. Strong and the new zoölogical fellow, Mr. Henry E. Crampton, were upon the teaching staff. The Columbia table was first occupied by Mr. Richard Weil (B.A., 1896). Upon his resignation it was assigned to Professor C. Judson Herrick, of Denison University, who has since been appointed a University scholar here. Dr. Arnold Graf, of Zurich, who for three years past has been pursuing researches, upon the leeches, in this Department, was also upon the lecture staff at Woods Holl. He secured valuable research material at Martha's Vineyard and at Provincetown, Mass.

The second zoölogical fellow, Mr. McGregor, spent the

summer collecting amphibians along the Ohio River, for the Department.

Professor Wilson was engaged during the greater part of the summer in seeing his work upon *The Cell in Development and Heredity* through the press. This fourth volume of the Columbia Biological Series appeared November 16th. The first volume of this series, *From the Greeks to Darwin*, by Professor Osborn, enters its second edition at the same time, and both works will bear the imprint of the Columbia University Press. The Russian edition of the latter volume, now appearing in Moscow, is the translation of Mr. I. M. Rubino, formerly a student of this department. It is revised by Professor Wagner, of the University of Moscow, and has a special preface referring to the work of Kowalevsky and other Russian evolutionists.

The Columbia Biological Table at Naples, subscribed for by Mr. William E. Dodge, of New York, was occupied by Mr. Albert P. Matthews, for two years our biological Fellow. He is now at Marburg, Germany, and will return to Columbia for his Ph.D. examination in May.

The East Indian and Australian "land-type" collection undertaken for the Department by Professor Henry A. Ward, of Rochester, unfortunately proved a failure, owing to the unprecedentedly bad weather which prevailed during his marine tour for Professor Agassiz. The special fund assigned to this purpose will be otherwise appropriated. In other directions the teaching and research collections of the Department have been notably increased from the Atlantic Coast both of Massachusetts and of North Carolina, besides that from the Pacific Coast. The fossil vertebrate collections of this season, under Professor Osborn's direction, were chiefly in New Mexico and Northern Wyoming.

The *Journal of Comparative Neurology*, in its fourth volume, is now mainly under the direction of Professor Herrick, of Denison University, who has entered for the Columbia Ph.D. Dr. Strong, of this Department, has recently joined the editorial staff. Other additions will soon be made to the

staff of this journal, which will give it a thoroughly intercollegiate character.

The fall term opens with a smaller number of Juniors electing zoölogy, but with a larger number of Seniors, and with a marked increase in the number of Graduates. The latter include, among those taking their major in zoölogy, professors, instructors, and students from the State Universities of Oregon, Kansas, Minnesota, Ohio, from the Massachusetts Institute of Technology, from Columbia, Yale, Princeton, Denison, and Leland Stanford Universities. Several others are taking minor courses in zoölogy, or have entered for the M. A. degree from the Medical School. The facilities and space of the laboratories are thus taxed to the utmost and the removal to Schermerhorn Hall is eagerly awaited.

EDITORIALS

The progress which has been made in the construction of the new buildings indicates that it will be possible to effect the removal of the University in 1897. The Library has advanced as far as the base of the dome, and all but the central portion has been roofed over. The dome, which will be constructed of concrete blocks, on the principle of the arch, will be the first of its kind to be erected in this country, and will be the result of the most careful study and experiment on the part of the builders. All of the floors have been laid, and much of the interior stone work is completed. Two columns of green Connemara marble are conspicuous features of the vestibule. Surrounding the reading room will be a series of columns of dark green Vermont granite, which will soon be in place. The furniture and interior fittings are now being made. Both Schermerhorn Hall and the Physics Buildings have made rapid progress, and in a few days will be under roof. The color effect produced in these buildings by the combination of buff Indiana limestone, dull red brick, and light pointing is very pleasing, and the warmth of tone presents an excellent contrast to the Library. Havemeyer Hall and the Engineering Building have not progressed so rapidly, owing partly to delays caused by the necessity of blasting a large amount of rock before the foundations could be laid, but the work is now being pushed forward, and the walls of the former building are up to the third story, and of the latter to the second story. The excavation for the University Building, which is of huge proportions, is now finished, and the contract has been awarded for that portion of the building which is to contain the boiler room and power plant. The contracts for the remainder of the building are held in abeyance. A model of this building will soon be placed on exhibition, and it will thus be possible to study the manner in which the varied purposes which it is intended to serve have been provided for. Since the plans were first submitted they have been greatly improved, and as now presented they appear to meet the needs of the new and expanded life upon which the University is entering.

The Alumni Council fills an important place as the representative of the Alumni of the College and of all the Schools collectively, and

the first annual report of its Secretary, which is printed elsewhere in this number (page 10), shows how useful it has already become. The Council is at once a cause and an effect. It is a natural result of the university organization accomplished several years ago, and of the closer organic relation between the several schools, and it will doubtless continue, as it has begun, to serve as the means of bringing together the Alumni of the College and of all the Schools, and of securing united and efficient action on their part in matters affecting the University as a whole. The agreement between the Alumni Associations of the College, the School of Mines, and the College of Physicians and Surgeons, under which the Council was established, preserves the independence of each Association, while uniting them in all common interests, and secures all, or nearly all, the advantages of consolidation, with none of its disadvantages. It is to be hoped, however, that in time the bodies represented in the Council may include associations of the Alumni of the other Schools.

The Council is now arranging for a meeting of all Alumni to be held on December 15th in the Fine Arts Building. It is proposed that this meeting shall be similar to the one which was held so successfully at the same place in 1894, and that it shall take the place of the annual Alumni dinner. The earlier part of the evening will be devoted to an informal reunion, and to an exhibition of the models of the Library and of the new University Building, comprising the Theatre, Dining Hall, and Gymnasium, with drawings and plans, to be followed by a supper and speeches.

The action of the Trustees in formally recognizing the desirability of residences for students on or near the University grounds will doubtless afford much satisfaction to the great body of the Alumni who have persistently urged the establishment of dormitories ever since a removal of the University was projected. The demand for dormitories, which has been so strong and so universal among graduates, is but a concrete expression of a desire to secure for Columbia more of that "college life" which is undoubtedly one of the greatest attractions of other colleges and universities, and which is by many regarded as an essential element of a college education. In many cases this feeling has been inspired by a sense of personal loss on the part of those who have not had this experience, and by the recognition of the fact that the students of other colleges

have enjoyed advantages which have heretofore been denied at Columbia. Now that the way has been opened to supply this want, it is to be hoped that the rumors which have been current for several years of large sums available for dormitories may materialize, and that the authority conferred upon the Treasurer to receive gifts for such purposes may soon be exercised.

Historically the action of the Trustees finds a precedent in that of their predecessors, the Governors of the College of the Province of New York, for King's College, when first erected, included dormitories and a dining hall for the students, and for many years after the college was established the students lived within its walls. The "Laws, Ordinances, and Orders," enacted in March, 1763, provide (Ch. I, Sec. 2) that "Each person admitted as above (viz. : as a student) shall have an Habitation assigned him by the President, in which he shall be obliged to lodge (unless by special leave obtained from the Governors or President) except at the stated vacations." The same ordinances provide (Ch. II, Sec. 2) that "the Students shall Dine regularly in the public Hall." That students continued to live in the College for a number of years after its establishment is made evident by the Statutes enacted in 1785, which provide (Ch. II, Sec. 5, 6) that "the disposal of the rooms in the College among the Students shall be left altogether to the Board of President and Professors," also that "every Student who boards at the College shall deposit each half year in the hands of the Treasurer for the use of the Steward, such a sum as shall be necessary to defray the expenses of his board for the ensuing half year." It seems that during the same period the President and certain of the professors resided in the College, though under the Statutes of 1785 no professor having a family was "obliged" to do so; and it will be remembered that until very recent years the President and also several professors have resided on the College grounds. It does not appear from the records at what date the students ceased to live in dormitories and to dine in hall, but there are many reasons to regret that the practice was ever abandoned. Certainly, under the conditions which will confront the University upon its removal to the new site, the need of providing for students places of residence will be greater than ever, and, fortunately, the opportunity will be commensurately greater. Whether dormitories should be built upon land now owned by the Univer-

sity, or upon additional land purchased for the purpose, is an open question in view of the probably increasing demands for space for educational buildings, but that dormitories will be imperatively needed scarcely admits of question. The situation of the new grounds, while enhancing their desirability, also enhances this need of dormitories for residents of the city, and much more so for residents of Brooklyn and other suburbs, who, if living at home, will be compelled to spend from two to three hours daily in travelling to and from the University.

A still stronger argument, however, is presented by the growth of the College into a University, and the increasing inducements which it offers to students in all parts of the country. To make it possible for these men to avail themselves of what Columbia offers it must be rendered practicable for them to live at a moderate cost and under conditions which will be favorable to study. At the present time 746 matriculated students, about forty-two per cent. of the total number of students registered in the University, reside outside of New York City or Brooklyn, and come from almost every State. These men now live in boarding houses in the neighborhood of the University, and the fact that the proportion is so large, even under the present unfavorable conditions, indicates that it would be still larger under conditions more attractive to the average student. But in this connection it is impossible to overlook the circumstance that in the neighborhood of Morningside Heights there are practically no boarding houses, so that to enable students to live near the University dormitories are not only desirable but essential.

It is unnecessary, however, to elaborate arguments in favor of a policy the advisability of which has now been conceded. In a report published in 1891, the President, in alluding to the unification of the several schools and to the large number of students pursuing courses under more than one faculty, remarked that "this policy has filled both officers and students with a new spirit, and the common life now brings inspiration and power into every part," and he dwelt with emphasis upon the great advantage which it was to the students in the professional schools "to carry on their work in the academic atmosphere created by the College." Vastly greater must be this advantage, vastly more inspiring will be the influence of this "common life" if it is extended beyond the few

hours of daily intercourse, and spends its very existence in an academic atmosphere. It only remains to present the argument in such a way that Columbia shall be furnished with the means of creating in her midst a student life, intellectually stimulative and rich in all the associations which tend to make a university a source of power and influence.

On Saturday, October 24th, the corner-stones of the new buildings of Barnard College were laid with suitable ceremonies. Although no guests were invited save the friends and benefactors of the College and the officers of Columbia University and the Teachers College, a procession of impressive length issued from the Teachers College and walked across the Boulevard to the new site. The corner-stone of Brinckerhoff Hall was laid by the Dean of Barnard College, Bishop Potter acting as chaplain and President Low making a brief address of congratulation. Miss Eleanor Milbank Anderson laid the corner-stone of Milbank Hall, with the Reverend E. Walpole Warren, D. D., as chaplain. Silas B. Brownell, LL. D., acting chairman of the Board of Trustees, returned thanks in the name of the College, and the exercises concluded with an eloquent address by Bishop Potter and his benediction.

The articles deposited in the corner-stones practically constitute a history of the movement in New York for the higher education of women, since they include the petition for co-education rejected in 1883 by the Trustees of Columbia, a copy of the Life of President Barnard, containing an account of his ever-memorable efforts in behalf of women, photographs of Dr. Arthur Brooks and Miss Ella Weed, of whom Barnard College is in large part a memorial, documents showing the gradual acquisition of property by the corporation, and the Dean's Report for 1895, with a statement of the present relations between the College and the University.

By the terms of the gift of Brinckerhoff Hall, it was to be built within one thousand feet of the site of Columbia. The motive of this condition was undoubtedly the wish to determine Barnard's policy as against academic isolation and in favor of academic membership in the university system. The wisdom and success of this policy could hardly be doubted by anyone who witnessed the spectacle on Saturday, and appreciated the significance for the education of women of the body of instructors who participated in it, of the official presence of trustees of Columbia University, and of the words of welcome spoken by President Low.

The bi-centennial of the birth of the Rev. Dr. Johnson, the first President of King's College, was appropriately commemorated on October 14th, at Christ Church, Stratford, of which Dr. Johnson was chosen rector in 1723. A biographical address was delivered by a descendant, the Very Rev. George A. Johnson, Archdeacon of Richmond County; and the Rev. Dr. Andrews, of Gilford, Conn., Dr. Johnson's birthplace, spoke on his character as a churchman. Mr. John B. Pine represented the University and spoke on Dr. Johnson's character as an educationist, dwelling upon the liberality and foresight evinced by Dr. Johnson in his first prospectus of the new College, which gave it from the outset a broader character than its contemporary institutions, and contrasting the College at its inception, consisting of one instructor and eight pupils, with the University as it exists to-day.

The recent sesquicentennial of Princeton is an event of much interest, not only as marking the growth and development of one of our oldest colleges, but also as an indication of the increased popularity and importance of such ceremonies and of the growing recognition of the university as a factor in national life. The ceremonies, which were marked by a degree of elaboration never before attempted upon any similar occasion in this country, were admirably arranged and were appropriate and impressive. Both the poem and the addresses were of an unusually high order, but perhaps the most important, as it was the most original, feature, was the series of lectures by the representatives of foreign universities delivered during the week preceding the public functions. Such an opportunity upon so generous a scale has never before been offered to the scholars of the country, and it added to the sesquicentennial a distinct educational value. In this respect, as well as in many of the details of arrangement, Princeton has furnished her sister universities with suggestions which should influence both the form and substance of other like commemorative ceremonies, and she has rendered them a real service in presenting so fine an example of a great university function.

Princeton's position among American colleges has been, and will probably continue to be, a conservative one, but, while standing always for a fine type of college, she now acknowledges the expansion of recent years beyond the undergraduate curriculum, and takes her place in name as well as fact among the universities of

the country. Fortunately or unfortunately, the direction of Princeton's growth seems to be determined, in part at least, by geographical situation, her distance from great centres of population making the establishment of strictly professional schools apparently undesirable. She very wisely proposes to centre her energies upon non-professional graduate work, fixing no limits, but choosing the philosophical and scientific fields rather than the technical and professional. With the increased endowment and the striking enthusiasm which mark the opening of this wider sphere, her outlook is bright, and she carries with her into the university career the congratulations and good wishes of every friend of higher education.

The establishment of an independent Department of History, coupled with the selection of Professor Sloane as its head, not only affords due recognition of the importance of the subject, but indicates the desire on the part of the Trustees to encourage its development. Under such able leadership it is not too much to expect that the department may in time become one of the strongest elements of the University. In connection with the new curriculum of the College, the action of the Trustees is most opportune, for that curriculum calls for much more extended courses in history than have heretofore been offered, and the College will be greatly strengthened thereby. No less important is the establishment of this department, as affecting the University, for it will not only make possible more university courses, but, by affording to undergraduates a broader and more comprehensive preliminary training, it will both fit them for university work and cultivate a disposition to pursue more advanced courses. The College and the School of Political Science will be the immediate gainers, but every department in the University will be the better able to accomplish good results if its students are well prepared in history. If it was the wish of the Trustees, in establishing the Seth Low Professorship in recognition of President Low's gift of the Library, to express their sense of its usefulness and to make it a source of increasing advantage to the University in more ways than one, they have succeeded most effectually.

Professor William M. Sloane, who has been appointed to the Seth Low Professorship of History and to be the head of the Department of History just established, was graduated from Columbia

College in 1869, and studied at Berlin and Leipzig, receiving the degree of Ph. D. from the latter University. While studying abroad he acted as private secretary to George Bancroft, United States Minister to Germany. He held the position of Professor of Latin at Princeton from 1877 to 1885, when he was transferred to the Professorship of History, which he has held up to the present time. In 1887 Columbia College conferred upon him the honorary degree of L. H. D., in recognition of his attainments as a scholar and an author. Among his works are *The French War and the Revolution*, published in 1893, and more recently the *The Life of Napoleon*, which has just been concluded in the *Century Magazine*, and has received most favorable comment at home and abroad.

Professor Sloane's training has been unusually broad and comprehensive, not only in history, but in languages; and he has a wide acquaintance both with men and books, at home and abroad. His attainments and strong personality have made him a powerful influence at Princeton, and he will be a great acquisition to the teaching force of Columbia. As the head of the Department of History, and as a member both of the Faculty of the College and of the Faculty of Political Science, he will be enabled to develop the study of history upon both undergraduate and university lines.

The selection of Nathaniel Lord Britton as Director-in-Chief of the New York Botanical Garden marks an era in the development of botanical science, not only in New York City and State, but in the entire country as well. While no better selection could have been made by the directors of the Botanical Garden, the University loses one of its most active, untiring and popular workers.

A graduate of the University (Mines, 1879; Ph. D., 1881), Professor Britton commenced his work at once as instructor in Geology under Professor Newberry, and in 1885 took charge of the Department of Botany, first as instructor and afterwards (1890) as professor. The collection of Dr. John Torrey, with less than a thousand books relating to botany, many of the latter in broken sets, constituted the equipment of the department. The valuable herbarium was in the greatest disorder and was suffering from neglect, besides being stored in quarters that did not render it secure from loss. The work of correlating the scattered elements of the herbarium into one series, and the task of building up a botanical library that

should be worthy of the University, Professor Britton entered upon with characteristic zeal. So well has he succeeded that we have now a splendid herbarium, rich in the types of Torrey, Asa Gray, Chapman, Meissner, Austin, and others, besides those of Professor Britton and his associates. The original herbarium has been more than trebled, while the library has been increased by the addition of serial after serial until it now contains nearly all of the world's periodical botanical literature, besides large numbers of floras, general and special works and miscellaneous papers on the subject, in all more than five times the original collection. Soon after the opening of the present Library Building, the botanical library and herbarium were placed in a stack room in the upper story, and here the collections have accumulated until every corner is crowded to overflowing, and piles of unmounted plants are stored, awaiting an appropriation to place them in order. About 1890 a laboratory was assigned to the department, at first in a corner of one of the upper stories of the President's house, and later in its present quarters in the small attic under the roof of the Mines Building. Here the undergraduate work in botany has been accomplished in the face of the most discouraging conditions and with an utterly inadequate equipment of apparatus; the graduate work has been accomplished for the most part under similar crowded conditions in the Herbarium. Through the medium of the Torrey Botanical Club, together with graduate students, a large coterie of voluntary workers has been centred about the Herbarium, whose work has contributed not a little to that of the department and has served to make the fame of the University greater in this and other lands, where the publications of the department have been distributed. To Professor Britton is also due the establishment of the Department of Botany in Barnard College.

A fitting close to Professor Britton's work in the University is the appearance of his elaborate *Illustrated Flora of the Northern United States and Canada*, on which he has bestowed the labor of many years. To have accomplished this work alone would have satisfied the ambition of most men for a lifetime, but Professor Britton's untiring activity has enabled it to appear while he is still in the prime of life. It is a matter of congratulation that Professor Britton, in his new capacity of Director-in-Chief of the Botanical Garden, will still be associated with the University, on account of the close identity of the future Department of Botany with the Botanical Garden in its graduate work.

The record of the proceedings at the Dedication of the new site has been printed, and copies are now ready for distribution. The volume contains the programme, the dedication ode, an historical sketch of the sites and buildings occupied by the College, with views of the old and new buildings, maps, and the text of the addresses in full, handsomely printed on large paper (107 pp.). It may be obtained, on application by letter, from the Secretary of the University. The price (in paper covers) is one dollar.

The Columbia University Press, with the approval of the Trustees of the University, has undertaken the publication of the BULLETIN. The form of the BULLETIN has been somewhat altered, and while the publication of official announcements and proceedings of the Trustees, the Council, and the Faculties will be continued, it is intended to devote more space to matters of general interest to the Alumni, and to make the BULLETIN a complete record of the work and progress of the University. It will also contain editorial notes, reports of the literary and scientific work of members of the Faculties and of Alumni, and Alumni notes. It is the desire of the Editorial Committee to make the BULLETIN a journal of real value to the University community, and to publish in it only matter worthy of permanent preservation. It will be glad to receive signed articles and communications on subjects relating to the University, and suggestions as to matter appropriate for publication.

UNIVERSITY STATISTICS

The statistics of registration for the past two years, which we have received from the Assistant Secretary of the University, present an interesting contrast, and suggest some satisfactory conclusions. In the College and in the Schools of Law and Medicine there is a very marked increase in the number. The growth of the College is particularly gratifying as indicating that the good effects of the new curriculum are already beginning to be felt, and the increase in Law and Medicine is scarcely less so in view of the severe requirements of both schools and the institution of the four years' course in Medicine. The figures printed in the following table give the registration as of November 7, 1896, and, in all the Schools except Medicine, of the corresponding date in 1895. The figures for the registration in the Medical School in 1895 are the total of the year.

STUDENTS

Primarily registered in the College :	1895	1896
Freshman Class,.....	67	99
Sophomore Class,.....	58	61
Junior Class,.....	52	49
Senior Class,.....	52	51
Specials,.....	35	40
	<hr/> 264	<hr/> 300
Primarily registered in the Law School :		
First-year Class,.....	126	171
Second-year Class,.....	80	100
Third-year Class,.....	60	65
Specials,	39	4
	<hr/> 305	<hr/> 340
Primarily registered in the Medical School :		
First-year Class,.....	241	276
Second-year Class,.....	161	158
Third-year Class,.....	230	152
Specials,.....	23	22
Unclassified,	54	16
	<hr/> 709	<hr/> 624
Primarily registered in the Schools of Applied Science :		
First-year Class,.....	123	105
Second-year Class,.....	85	88
Third-year Class,.....	71	80
Fourth-year Class,.....	50	63
Graduates,	1	3
Specials,	21	16
	<hr/> 351	<hr/> 355
Primarily registered under the Faculty of Political Science,.....	58	59
Primarily registered under the Faculty of Philosophy,.....	87	82
Primarily registered under the Faculty of Pure Science,.....	32	36
	<hr/> 1806	<hr/> 1796

SUMMARIES OF UNIVERSITY LEGISLATION

THE TRUSTEES. JUNE MEETING

At the meeting of the Trustees held on June 1, 1896, the President presented a letter from Mrs. Samuel Lawrence and her sister, Mrs. James R. Swords, enclosing two checks, each of \$3,000, making \$6,000, as a gift to Columbia University in memory of their brother, Alexander I. Cotheal, for the purpose of founding "The Alexander I. Cotheal Fund for the Increase of the Library," the income only to be used and to be applied to the purchasing of books in or relating to Oriental languages and Oriental countries. The gift was accepted with the thanks of the Trustees. The President also reported a gift from Mr. Louis Stern of a number of valuable Hebrew manuscripts. Revised plans for the University Building were submitted and approved, subject to modification in detail, and the Committee on Buildings and Grounds was authorized to proceed with the construction of the lower portion of the building, including the Engine Room and the Gymnasium. A proposition was received from the Trustees of the University Press for the publication of the UNIVERSITY BULLETIN and for the establishment of a book-store upon the removal of the University to the new site, and was referred to the Committee on Finance with power. An appropriation was made for the publication of a record of the Dedication proceedings, and of the proceedings on the occasion of the laying of the corner-stones of the Library, Schermerhorn Hall, and the Physics Building.

The office of Bursar was created, and Mr. George Fisher, formerly the Registrar of the School of Mines, was appointed to the position.

The President reported the election of Professor Nathaniel L. Britton as Director-in-Chief of the New York Botanical Garden and his consequent resignation as Professor of Botany.

Resolved, That the resignation of Professor Nathaniel L. Britton as Professor of Botany be accepted, to take effect June 30, 1896.

Resolved, That, in recognition of his valuable services to the University, and of his appointment as Director-in-Chief of the New York Botanical Garden, the name of Professor Britton be retained on the roll of professors as Emeritus Professor of Botany.

The following appointments were made: Lucien M. Underwood, Professor of Botany; Carlo L. Speranza, A.M., Adjunct Professor of the Romance Languages and Literatures; Bashford Dean, Ph.D., Adjunct Professor of Zoölogy.

The following appointments were confirmed: Theodore Greely White, Ph.B., A.M., Assistant in Physics; Vanderpoel Adriance, M.D., Assistant in Normal Histology; John Alexander Mathews, B.S., A.M., Assistant in Assaying; Arthur Van Gelder, Ph.B., Assistant in Chemistry; William H. Rockwell, Jr., M.D., Assistant Demonstrator of Anatomy, to succeed Dr. Elliot, resigned. The President reported the following appointments by the Faculty of Political Science: W. R. Shepherd, A.M., Prize Lecturer in History, to succeed H. A. Cushing, resigned; W. Z. Ripley, Ph.D., Prize Lecturer in Physical Geography and Ethnology.

THE TRUSTEES. OCTOBER MEETING

The President announced the death of Mr. Joseph W. Harper, which occurred on July 21st, and of Mr. William G. Lathrop, Jr., which occurred on August 2d. The President and the Treasurer submitted their Annual Reports for the year ending June 30, 1896.

The Committee on Buildings and Grounds reported that the Library, Schermerhorn Hall, and the Physics Building had so far advanced as to leave no reasonable doubt that they would be under cover before winter, and that the other buildings were now progressing favorably; also, that a contract had been awarded for the construction of the southerly portion of the University Building, which is to be occupied by the power plant. The Committee was authorized to make all necessary supplementary contracts to complete the Library and other buildings, and to provide the necessary furniture and equipment.

The President reported the loss by fire of the instruments used by the Summer School of Surveying, the instrument house having been burned on the night preceding the opening of the summer session; but stated that the loss was covered by insurance, and that the Department of Civil Engineering had been able to carry on effectually the work of the school with a loss of only twenty-four hours.

The President reported that he had arranged with the Trustees of Carnegie Music Hall for the use of certain rooms in the Hall for the Department of Music, and had also arranged for the delivery of public lectures upon Music, to be known as "The Columbia Uni-

versity Lectures in coöperation with Carnegie Music Hall." Professor MacDowell was assigned to the Faculty of Philosophy.

A vote of thanks was tendered to Mr. Jacob H. Schiff for a gift of \$5,000, to be used as a Students' Loan Fund. Gifts of books were received from Mr. W. Walter, of the Class of '81, and from Dr. Francis H. Markoe. A letter was received from Mr. Charles C. Worthington, offering to equip a Laboratory of Hydraulic Engineering in the School of Mechanical Engineering, as a memorial of his father, Henry R. Worthington. The gift was accepted, with the thanks of the Trustees, and it was ordered that the laboratory be designated The Henry R. Worthington Laboratory of Hydraulic Engineering.

The Trustees confirmed the action of the Faculty of Applied Science in promoting Adolph Black, C. E., to be Tutor in Civil Engineering; Charles Durlath, Jr., C. E., to be Assistant in Civil Engineering; and Heinrich Ries, Ph. D., to be Assistant in Mineralogy. The Faculty of Pure Science was authorized to appoint Herbert Maule Richards, Sc. D., Tutor in Botany. The President reported the appointment of Herbert Noble, LL. B., as Lecturer on Bailments and Carriers, and on Code Pleading and Practice, for the academic year 1896-97.

UNIVERSITY COUNCIL. OCTOBER MEETING

At the meeting of the University Council held October 12, 1896, the following action was taken:

Professor John Krom Rees was elected Secretary for the year 1896-97. The President reported that, under the authority given by the Council May 19, 1896, he had, on June 4, 1896, reappointed Walter Wheeler Cook, A.B., Columbia, 1894, to the John Tyndall Fellowship for the Encouragement of Research in Physics for the year 1896-97.

George N. Olcott, A.B., Columbia, 1893, University Fellow in Latin, 1894-96, was appointed to the Henry Drisler Fellowship in Classical Philology for the year 1895-97, and was granted permission to spend the year of his Fellowship abroad, dividing his time between the American School of Classical Studies at Rome and the American School at Athens.

THE TRUSTEES. NOVEMBER MEETING

The resignation of Mr. Vanderbilt as a member of the Committee on Buildings and Grounds was received and accepted with re

gret. An election to fill the vacancies existing in the Board was postponed.

The Committee on Buildings and Grounds reported the laying of the corner-stones of Havemeyer Hall and the Engineering Building on November 4th, and were authorized to have each of the corner-stones suitably indicated by an inscription and the date at which the stone was laid.

A proposed agreement with Barnard College providing for the establishment of the Brooklyn and Curtis Scholarships for women was submitted and approved. The Committee on Education also presented a report on the Seth Low Professorship of History, and recommended the appointment of Professor William Milligan Sloane, of the Class of '68, nominated by President Low as the first incumbent of the chair. The recommendation was accepted and resolutions were adopted creating an independent Department of History, changing the title of the Seth Low Professorship of American History to the Seth Low Professorship of History, and designating the occupant of the chair as head of the Department. The title of Professor Burgess was changed from Professor of History, Political Science, and Constitutional Law to Professor of Political Science and Constitutional Law, with liberty to give such course or courses in History as he might wish; and the titles of Professor Dunning and Professor Osgood were changed from Adjunct Professor of History to Professor of History.

The following gifts were received: \$1,000, for the establishment of the H. C. Bunner Gold Medal, contributed by a number of his friends; from Mr. John D. Crimmins, a valuable collection of books relating to the Councils of the Mediæval Church; from the Duc de Loubat, a set of photographs of Mexican manuscripts, reproduced for him by the authority of the French Minister of Public Instruction; from Mr. Henry W. Maxwell, an autograph letter from George Washington to Alexander Hamilton, acknowledging the receipt of a copy of the *Federalist* and expressing his high appreciation of its merits.

Upon the recommendation of the various faculties the President was authorized to grant suitable certificates to special students who have completed satisfactory courses in the University, but whose preliminary training does not entitle them to any degree.

The following resolution was adopted:

Resolved, That in the opinion of the Trustees it is desirable that, upon the removal of the University to the new site, buildings

to be used as residences for students should be erected on or near the University grounds, and that the Treasurer be authorized to receive gifts to be applied to the purchase of land or the erection of a building or buildings for such purpose.

The following appointments by the Faculty of the College were confirmed: George B. Germann, A.B., Pd.M., as Assistant in Mathematics; Francis A. Provot, C.E., as Assistant in Mathematics; and D. C. Wells, A. B., E.E., as Assistant in Physics. Also the following appointments by the Faculty of the College of Physicians and Surgeons: H. A. Griffin, M.D., Lecturer in *Materia Medica* and Therapeutics, during the absence of Dr. Peabody; Samuel A. Tucker, Ph.B., Assistant Demonstrator in Chemistry; Benjamin M. Jaquish, B.S., Assistant Demonstrator in Toxicology; and George Muller, Ph.B., Lecturer in Chemistry. The President reported the appointment of David Bandler, A. B., LL. B., as Lecturer on the Law of Receivers.

The Trustees adjourned to meet on the first Monday in January.

UNIVERSITY COUNCIL. NOVEMBER MEETING

The Council recommended, for the degree of Master of Arts: Warren Waverley Phelan, A.B., Columbia University, 1894. Major subjects: Comparative Jurisprudence. Minor subjects: International Law; Sociology. Essay: A History of the Law of Marriage and Divorce in Maryland. Ernest Valentine Hubbard, A.B., Columbia University, 1894. Major subject: Zoölogy. Minor subjects: Zoölogy; Botany. Essay: *Fundulus heteroclitus*.

The following resolutions were adopted in regard to the University Scholarships:

Resolved, That the regulations in regard to University Scholarships be amended so that the full number of candidates for scholarships be recommended in May of each year.

Resolved, That no applications for University Scholarships shall be considered by the Committee on University Scholarships later than October 15th.

UNIVERSITY PUBLICATIONS

For purposes of record and information there is published in each number of the BULLETIN a complete list of the recent issues of the various serial Studies and Contributions issued from the University.

STUDIES IN HISTORY, ECONOMICS, AND PUBLIC LAW

(Edited by the University Faculty of Political Science)

VOLUME V (498 pp.)

1. Double Taxation in the United States. By Francis Walker, Ph.D. Price, 75 cents.
2. The Separation of Governmental Powers. By William Bondy, LL.B., Ph.D., Sometime Fellow in Political Science. Price, \$1.00.
3. Municipal Government in Michigan and Ohio. By Delos F. Wilcox, Ph.D. Price, \$1.00.

VOLUME VI (601 pp.)

History of Proprietary Government in Pennsylvania. By William Robert Shepherd, Ph.D. Price, \$4.00; bound, \$4.50.

VOLUME VII

1. History of the Transition from Provincial to Commonwealth Government in Massachusetts. By Harry A. Cushing, Ph.D. Price, \$2.00; bound, \$2.50.

For further particulars apply to Professor J. B. Moore, Columbia University, or to The Macmillan Co., New York City.

CONTRIBUTIONS FROM THE HERBARIUM OF COLUMBIA UNIVERSITY

CONTINUATION OF VOLUME IV

No. 93. *Oenothera* and its Segregates. By John K. Small (1896).

No. 94. A Preliminary Revision of the North American Isoetheciaceæ. By A. J. Grout (1896).

No. 95. Revision of the Genus *Asimina* in North America. By George V. Nash (1896).

No. 96. Notes on *Potentilla*.—I, II. By P. A. Rydberg (1896).

No. 97. A Neglected Species of *Oxalis* and its Relatives. By John K. Small (1896).

No. 98. Studies in the Botany of the Southeastern United States.
—VI. By John K. Small (1896).

No. 99. Notes on *Potentilla*,—III. By P. A. Rydberg (1896).

No. 100. On a new Species of *Scrophularia* hitherto confounded with *S. Marylandica*. By Eugene P. Bicknell (1896).

Title Pages for Vols. I, II, III, and IV can be supplied.

VOLUME V

No. 101. The Genus *Cephalozia* in North America. By L. M. Underwood (1896).

No. 102. New and Noteworthy Species of *Saxifraga*. By John K. Small (1896).

No. 103. Notes on *Potentilla*,—IV. By P. A. Rydberg (1896).

No. 104. Studies in the Botany of the Southeastern United States,—VII. By John K. Small (1896).

For copies, address Professor Underwood, Columbia University.

CONTRIBUTIONS FROM THE MINERALOGICAL DEPARTMENT OF COLUMBIA UNIVERSITY

VOLUME VI

5. Ueber eine einfache Vorrichtung zur Messung der Brechungs-
exponenten kleiner Krystalle mittelst Totalreflexion. By A. J.
Moses und E. Weinschenk. *Zeitschrift für Krystallographie*,
etc., xxvi, 2.

A Device for Simplifying the Drawing of Crystal Forms. By
A. J. Moses. *American Journal of Science*, i, June, 1896.

6. The Monoclinic Pyroxenes of New York State. By Heinrich
Ries. *Annals of New York Academy of Sciences*, ix, June, 1896.

7. Optical Mineralogy. By Lea McL. Luquer. *School of Mines
Quarterly*, xvii, July, 1896.

8. On the "Augen" Gneiss Area, Pegmatite Veins and Diorite
Dikes at Bedford, N. Y. By Lea McL. Luquer and Heinrich Ries.
American Geologist, xviii, October, 1896.

CONTRIBUTIONS FROM THE GEOLOGICAL DEPARTMENT OF COLUMBIA UNIVERSITY

VOLUME V (Continued)

No. 35, 1. A New Species of Leguminous Pods from the Yellow
Gravel at Bridgeton, N. J. By Arthur Hollick. *Bull. Torrey
Botanical Club*, xxiii, February, 1896, 46-49, Pl. cclviii, cclix.

2. Is Palæospondylus a Cyclostome? By Bashford Dean, of the

Department of Zoölogy. *Trans. N. Y. Acad. of Sci.*, xv, April 9, 1896, 101-104, Pl. v, Fig. B.

3. Appendages to the Petioles of *Liriodendra*. By Arthur Hollick. *Bull. Torrey Botanical Club*, xxiii, June, 1896, 249, 250, Pl. cclxix, cclxx.

No. 36, 1. The Stratigraphical Relations of the Brown's Park Beds of Utah. By John Duer Irving, A. B. *Trans. N. Y. Acad. Sci.*, xv, 252-259, Pl. xviii, September, 1896.

2. The Glacial or Post-Glacial Diversion of the Bronx River from its old Channel. By J. F. Kemp. *Transactions of the N. Y. Acad. Sci.*, xvi, October 9, 1896.

No. 37. Geological Notes, Long Island, Block Island. By Arthur Hollick. *Transactions N. Y. Acad. Sci.*, xvi, October 19, 1896.

VOLUME VI

A Handbook of Rocks for Use without the Microscope, with a Glossary of Petrographical Terms. By J. F. Kemp. \$1.50. Printed for the author, September, 1896.

CONTRIBUTIONS TO PHILOSOPHY, PSYCHOLOGY, AND EDUCATION

The Columbia University Contributions to Philosophy, Psychology, and Education are issued under the editorship of the officers of the Department, and appear at irregular intervals. They are published for the Department by The Macmillan Co., 66 Fifth Avenue, New York, to whom inquiries and orders should be directed.

The following are the latest issues:

5. Hegel as Educator. By Frederic Ludlow Luqueer, Sometime University Fellow in Education in Columbia College. June, 1896. \$1.00.

5. Hegel's Doctrine of the Will. By John Angus MacVannel, Sometime University Fellow in Philosophy in Columbia College. November, 1896. \$1.00.

BIOLOGICAL CONTRIBUTIONS FROM COLUMBIA UNIVERSITY:

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(Edited by HENRY F. OSBORN and EDMUND B. WILSON)

This series is designed to include the more important special researches in Embryology, Cytology, Comparative Neurology, Invertebrate and Vertebrate Morphology, Vertebrate Paleontology, from the Zoölogical Department. The researches are being col-

lected, and in many cases reprinted, from the journals in which they are originally published.

The edition is limited to 100 copies, which will be used for exchange with similar series published at other colleges and universities. Volume I, containing ten Contributions, is now in press.

COLUMBIA UNIVERSITY BIOLOGICAL SERIES *

(Edited by HENRY FAIRFIELD OSBORN, Da Costa Professor of Zoölogy.
The Macmillan Co., Publishers, 66 Fifth Avenue)

Vol. I. From the Greeks to Darwin. The Development of the Evolution Idea. By Henry Fairfield Osborn, Sc. D. 259 pages. \$2.00. Published in September, 1894. The Second Edition appeared in November, 1896.

Vol. II. Amphioxus and the Ancestry of the Vertebrates. By Arthur Willey, Sc. D., Balfour Student of the University of Cambridge. 316 pages, 135 illustrations. \$2.50. Published in October, 1894.

Vol. III. Fishes, Living and Fossil. An introductory study, by Bashford Dean, Ph. D., Adjunct Professor of Zoölogy. 300 pages, 344 illustrations. Price, \$2.50. Published in October, 1895.

Vol. IV. The Cell in Development and Inheritance. By Edmund B. Wilson, Ph. D., Professor of Invertebrate Zoölogy. Published in November, 1896.

Vol. V. The Protozoa. By Gary N. Calkins, M. A.

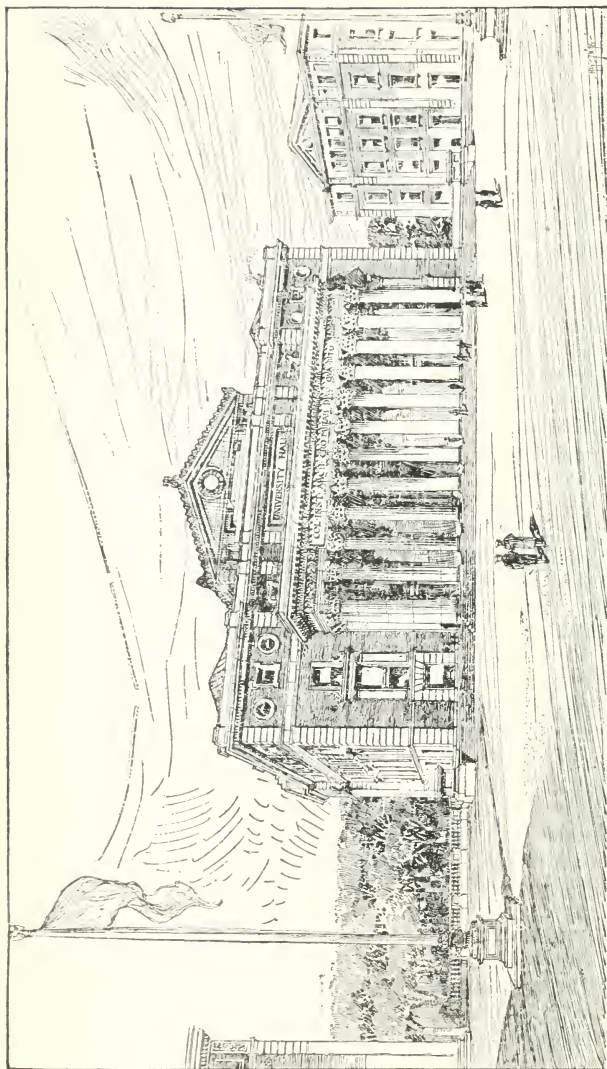
Vol. VI. An Introduction to Comparative Neurology. By Oliver Strong, Ph. D.

STUDIES FROM THE DEPARTMENT OF PATHOLOGY OF THE
COLLEGE OF PHYSICIANS AND SURGEONS

The Studies from the Department of Pathology are issued annually or biennially, and consist of reprints of the more important papers published by the workers in the department. Four volumes have already been issued, the last covering the published work of the academic year 1894-95.

The studies can be obtained from James Dougherty, 411 West 59th street. Price, \$1.00 per volume.

* This series has been incorporated under the Columbia University Press, and the second edition of Volume I, and Volumes II and III bear the Press imprint. The first edition of Volume IV bears the Press imprint.



UNIVERSITY HALL

CONTAINING ALUMNI MEMORIAL HALL, THEATRE AND GYMNASIUM
(EAST SIDE)

COLUMBIA

UNIVERSITY BULLETIN

MARCH, 1897

XVI

UNIVERSITY HALL

University Hall is to constitute one of the central and most important features of the group of buildings on Morningside Heights. It will stand about two hundred feet north of the Library, and will face to the south. The large portico, which offers the main approach to the building, is upon the higher level of the site. The grounds are divided by a transverse retaining wall into two levels, the higher level being one hundred and fifty feet above tide water, and the lower averaging one hundred and twenty or one hundred and twenty-five feet above tide water. The rear or northerly portion of the building is to be erected upon the lower level, and will have a greater apparent height. In locating University Hall, and Schermerhorn Hall and Havemeyer Hall, which will adjoin it on the east and west, advantage has been taken of the difference in levels to secure the greatest amount of light and cubic space without producing an effect of exaggerated height. The basements of these buildings, visible only on the north, will be constructed of roughly cut New York stone of a dark gray color, such as has been used in the retaining wall, and the upper stories will rise from the basement wall as from a terrace. The upper portion of University Hall will be constructed of materials similar to those used in

Schermerhorn Hall and the other buildings designed for educational purposes, over-burned brick of a dull red color, and buff Indiana limestone, the latter being used for the portico and for all decorative features.

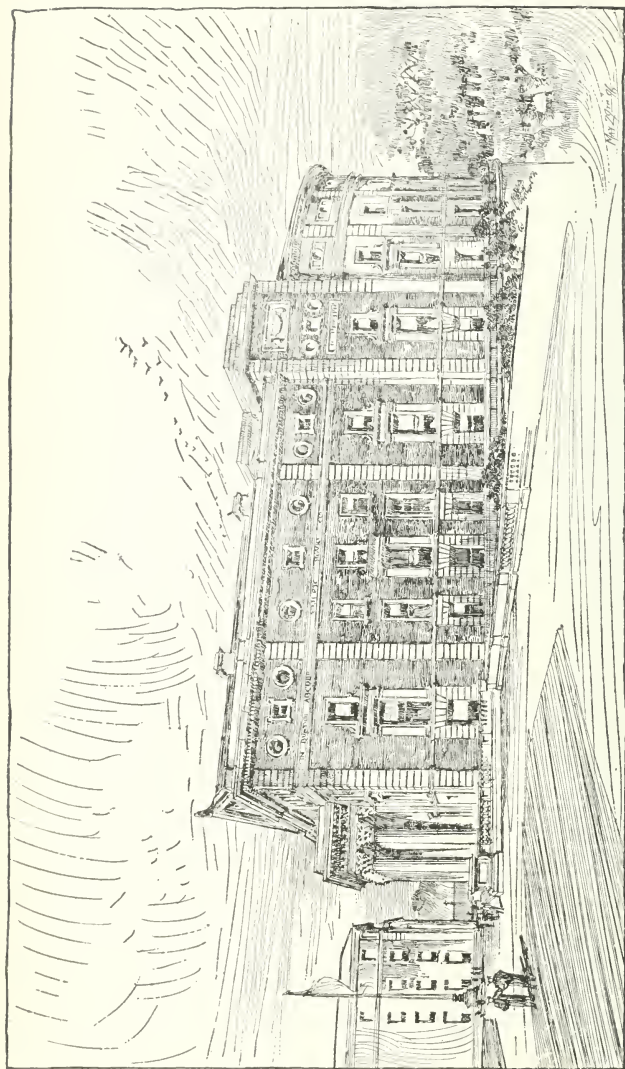
In dimensions University Hall is the largest of the buildings to be erected on the new site. It will have a frontage of one hundred and seventy-six feet and a length of two hundred and sixty feet. The cornice is sixty-nine feet above the upper terrace, and is of the same height as the cornice line of the surrounding buildings. It is planned to serve four distinct purposes: those of a University Theatre; of a Gymnasium; of a "Commons" or Dining Hall, and University Offices; and of a power house. The power plant will occupy the basement, between the retaining wall and the driveway which intersects the building, where it will be almost completely concealed from sight. The remaining portion of the basement, comprising the great apsidal space at the northern end of the building, is to be devoted to the Gymnasium, a description of which is given in the following article. Immediately above the Gymnasium is to be the University Theatre, which will have a seating capacity of 2,500. The Theatre will be accessible through the corridors leading from the portico on the south front of the building, and it can also be reached by means of the transverse driveway which crosses the grounds near 119th street. At the side of this driveway, and underneath the building, will be a spacious vestibule, from which two broad stairways will lead up to the Theatre. The greater portion of the space in this part of the building will be occupied by the Auditorium, but such as is not required for this purpose will be used for the various business offices of the University. These rooms will be lighted by the ranges of windows surrounding the apse. The remaining portion of the building, that which fronts immediately upon the Library, will be occupied principally by the Alumni Memorial Hall. This room will be one hundred and eighteen feet in length, sixty-four feet in width, and seventy-six feet in height, with a seating capacity of about six hundred. It is proposed that

the interior shall be finished somewhat in the manner of the large halls in the English Universities, and its size and proportions cannot fail to give it the dignity consistent with its character. The remainder of this part of the building will be devoted to private dining-rooms and kitchens, and to rooms to be used as places of meeting for the members of the various faculties and for the students. For Commencements and other public occasions the Theatre, the Hall, and other connecting rooms in the southerly portion of the building may be used together, and will provide ample accommodations. Memorial Hall will be the recognized place of the Alumni when they revisit Alma Mater, and, if it is enriched as it should be with portraits and other memorials of distinguished graduates, it will have an historic and personal interest which will endear it to every Columbia man. As a "Commons" or Dining Hall, where the officers and students will meet daily, it will be the centre of the social life of the University.

The construction of University Hall has been carried forward to the point of completing the excavations and a large part of the foundations, and the basement is now in process of erection.

THE GYMNASIUM

The Gymnasium will occupy the larger part of the basement of University Hall. To describe it as in the basement, however, is somewhat misleading, for it is entirely above ground, the floor of the large room being on a level with the surrounding lawn. This room, which will be the principal feature of the Gymnasium, will be semi-circular in form, with a floor space of one hundred and sixty-eight feet by one hundred and thirteen feet, and a ceiling thirty-five feet in height. It will be lighted by twelve large windows, facing the north, east, and west, and a spacious doorway at the northern end of the room will open on the adjacent grounds. At the southerly angles of the room staircases will lead down to the swimming pool and up to the dressing rooms. The swimming pool will be situated directly under the floor of the Gym-



UNIVERSITY HALL

CONTAINING ALUMNI MEMORIAL HALL, THEATRE AND GYMNASIUM
(EAST SIDE)

nasium, but it will be amply lighted from the area surrounding the building. The pool will be semi-circular, one hundred by fifty feet, with a depth of ten feet, and will be so arranged as to serve as a rowing tank when required. On the main floor the Gymnasium will be completely separated from the engine rooms by the driveway, which intersects the grounds and passes through the building. At the side of the driveway and at the southerly end of the large room, a space about eighteen feet wide and five feet above the floor level will be shut off by a glass partition, so as to form a vestibule and, at the same time, to serve as a gallery from which all parts of the Gymnasium can be seen. Adjoining the vestibule will be storage rooms for bicycles.

A running track will be carried around the Gymnasium as a gallery, about twenty feet above the floor, and will also be extended around the remainder of the building. This is made possible by the fact that while the Gymnasium occupies the full height of the northerly half of the basement, the remainder is divided into two stories, the second being on the level of the track. The track will be twelve feet wide and will have nine laps to the mile. The remaining space on the second floor will be used for rooms for fencing and boxing, offices for the director, dressing rooms and shower baths, and will afford the most ample accommodations.

The model of the building, which is on exhibition in the Metropolitan Museum of Art, indicates that the exterior of the building is no less attractive than the plans would suggest, and, in respect to size and convenience, the Gymnasium will be unsurpassed by any in this country. In addition to its advantages as a Gymnasium, the large room will be readily adaptable for Commencement, when it can be so arranged as to have a seating capacity for fully twenty-five hundred people.

THE ORGANIZATION OF THE COLUMBIA FACULTIES

On the appearance of the University Catalogue each winter we look carefully at ourselves, as mirrored in its faithful reflection, and are grateful to find that each new view gives us fresh cause for self-congratulation. It is no lifeless, motionless image that we see there, a mere group of portraits, as in a photograph, but as we look each one's reflected self is seen to be hard at work; and complicated as the varied activities appear at first, the part of each man in the general task gradually becomes clear.

Remembering the organization of our university laborers seven years ago, and comparing it with that now in force, we shall have the change and the improvement in our system most vividly impressed upon us. Year by year, as the number of officers of instruction and government has increased, their relations to each other have been made more logical, the possibility of interference or mere duplication of work has been reduced to a minimum or eliminated entirely, and the opportunities for profitable coöperation vastly increased. The roll of three hundred and two men, teachers and administrators, effectively organized for their work, is indeed a promise of the greatest usefulness and further development under the favoring conditions of the new site.

The form of organization which has thus grown up at Columbia makes possible an almost indefinite expansion of the work of instruction and research, without entailing any structural changes of importance. A glance at the Catalogue shows that besides the traditional division of faculties—here probably more fully and harmoniously developed than anywhere else in America—there is a not less thoroughly developed organization by departments. We notice also in some cases a peculiarly effective alliance of two or more departments in a “division”—a term not yet recognized in the Catalogue but familiar in actual use to many of the profes

sors. Under the systems of European, especially of German, universities, the lines between the faculties are so sharply drawn that a professor seldom or never sits in more than one faculty, although his lectures may be attended by students of several schools. But as Columbia University includes a *Polytechnicum*, besides the equivalent of the last two or three years of both *Realschule* and *Gymnasium*, the adoption of a similar principle, desirable as it might be in many ways, though not in all, would vastly increase the expenses of the University. For this reason the very independent departmental organization, the lines of which cross those of the division into faculties, greatly facilitates the work of instruction and the coördination of courses. Most of the professors in the faculties of Political Science, Philosophy, and Pure Science have seats also in the Faculty of the College, and there are a number of professors who are members of even three faculties. A glance at the figures of registration shows the large use made of the privilege under which a student, while primarily registered under some faculty only, may avail himself of the opportunities offered by the others. The largest degree of reciprocity exists, perhaps, between the Faculties of Political Science and Philosophy, as the differences in the work of these two is not greater than that between the work of several of the departments under each. For instance, the departments of Philosophy, Psychology, and Education stand, in the matter of subject and nature of their instruction, no closer to the department of Semitic Languages than to that of Sociology, in spite of the organization which assigns the latter to another faculty. Again, the Faculty of Pure Science, while at many points touching closely the Faculties of Medicine and Applied Science, also touches at many points, and not less closely, the Faculty of Philosophy. The degrees of master of arts and doctor of philosophy are given on the recommendation of any University Faculty except Law and Medicine; but the Faculty of Applied Science recommends also for the technical degrees, while the Faculties of Political Science, Philosophy,

and Pure Science recommend only for the two former. In the case of such a subject as anthropology, the department itself is a sort of joint commission from Philosophy and Political Science.

Under such circumstances the *teaching* organization is naturally more one of departments than of faculties; and within the limits of the Faculty of Philosophy and the Faculty of the College we find at least three "divisions" composed of closely related departments; one comprising philosophy (with logic and ethics), psychology, and education, another English and literature, and the third Latin and Greek, with their accompanying archæology and epigraphy, under the title of "Classical Philology." A similar purpose is served in the Faculty of Political Science, though in a different way, by the assignment of definite groups of subjects of study for the higher degrees, each group being under the charge of one or more departments. The instructors in the departments constituting such a "division" naturally form a kind of committee, of which the senior professor acts as chairman; and it would be hard to overestimate the good practical results of such an alliance. It is especially helpful where, as in the departments of Latin and Greek, a series of courses covering seven years of instruction, from the Freshman year in the College to the third year of study for the doctor's degree, has to be devised and carried on. The same principle again is seen at work on a larger scale in the new organization of the four Schools of Mines, Chemistry, Engineering, and Architecture, under the charge of the Faculty of Applied Science. Of course, for legislative and administrative purposes the faculty is the unit, but it is the department which, whether alone or in alliance, practically determines the work to be done. Naturally, in every department of the University, each department is subject to the authority of the faculty or faculties under which its courses are organized; and in all matters regarding the higher degrees of master of arts, master of laws, and doctor of philosophy, every faculty offering courses that lead to one or more of these degrees is under the

control of the University Council, which also takes cognizance of all questions affecting more than one faculty.

A point often misunderstood, or imperfectly understood, is the relation of the College, especially of its fourth year of study, to the University faculties, both professional and non-professional. With the object of shortening by a year the course of those students who wish to get the degree of A.B. as well as the professional degree, Seniors in the College are allowed to select a part or even the whole of the required fifteen hours weekly from among the subjects open to first-year students in any of these University faculties. Those Seniors who do not intend to follow any course of professional study before taking the bachelor's degree elect courses opened to them by the three non-professional faculties. Many of these courses are such as are designed chiefly for candidates for the higher degrees. Some of them may be counted toward either the bachelor's or the higher degree, in the latter case additional work in connection with them being generally required; others may be counted toward the bachelor's degree only, and so are practically Senior courses in the College itself. But as a matter of fact, the College Faculty, *as such*, offers few or no courses to its Seniors; it sends them to the University faculties for their courses, but holds them under its own control as to attendance and examinations. The reports concerning these are generally sent directly to the Dean of the College by the various departments, whether represented in the Faculty of the College or not, a formal report being also transmitted by the Dean of each University faculty to the Dean of the College concerning the Seniors who have taken courses under that faculty.

The College is thus, to a certain extent, the foundation on which the University is reared. It is, however, difficult, if not impossible, to draw the line of demarcation sharply between them; and the College is not by any means the only foundation for the university faculties, since the professional schools are still open to men who have not passed through a college course here or elsewhere. The adoption of the new

curriculum, with its much greater freedom of choice, will undoubtedly attract many who would otherwise go straight to the professional schools, as well as induce some who would seek them after a year or two in the College to finish their course for the bachelor's degree, both results which must make for a much higher standard of culture among the professional students.

For the first time, Barnard College and Teachers College have been admitted within the cover of the Columbia Catalogue. Barnard College is called in the Catalogue "a part of the educational system of Columbia University;" it has in practice, if not in theory, been such almost since its foundation in 1889. For several years almost all the courses offered under the Faculty of Philosophy have been open to Barnard Seniors, and to women graduates registered at Barnard College, on precisely the same terms as to men. To a limited extent, Teachers College forms also a part of Columbia's educational system. The distance separating the two institutions has prevented the full use of the advantages thus reciprocally offered, but the removal to the new site will doubtless bring about a large participation in the courses at Teachers College open to students of Columbia, and conversely.

E. D. PERRY

THE OUTLOOK IN MEDICAL EDUCATION

The great progress which has been made in the last half century in the science and art of medicine can be in no way so clearly and so vividly realized as by comparison between the great metropolitan medical schools of to-day and similar institutions in earlier times.

In the old days, which many of our still active practitioners well remember, the medical student was registered with a practicing physician, who more or less intelligently directed his reading, and sometimes took him on his rounds as a sort

of private assistant, giving him fitful glimpses of patients. He attended rarely three, sometimes two, often only one course of lectures in a medical school, hearing the same lectures over again each year. The only thing which he ever learned actually to do with his fingers in the medical school was to dissect the dead subject, and here his experience was not usually large. He made careful notes of many "views" regarding disease and its nature, and usually stepped out upon the arena with a general idea that disease was a "thing" which got into the bodies of certain unfortunate people, and which he was to drive out if he could with some one or more of his preceptor's prescriptions, which he had carefully copied in small compass ready for emergencies. When he had discovered the proper name to attach to his patient's malady, the rest was largely a matter of an alphabetical index of remedies and a calm abiding of the consequences. It should not be imagined that the practitioners of medicine in the old days were necessarily lacking in wide views, practical knowledge, and great skill. But when this was the case, it was usually owing to a training which they had secured after and not before they became doctors of medicine.

The medical college consisted of a group of medical men, who obtained a charter, hired a building, partitioned off among themselves the subjects which were deemed essential: anatomy, physiology, and possibly chemistry, *materia medica*, pathology, and the practice of medicine, obstetrics, and surgery. Each day the students sat upon hard benches, taking notes for dear life, while the subject matter of these themes was let loose upon them in swift succession, for better or for worse, through five long hours. Perhaps there was a clinic in the afternoon, perhaps not. There were no laboratories for practical work, either of chemistry or physiology or histology or pathology or bacteriology or microscopy. Indeed, the last four of these themes as independent subjects were unknown. A great many lectures, a little dissecting, a few clinics, possibly some quizzes, a final examination, and the degree of M.D. was won.

The medical schools in this country were very rarely endowed, or if at all, but meagrely. The fee of the students in a popular school sufficed to pay the running expenses of the establishment, and to indemnify the professors fairly and often liberally for their time and labor. What the medical student got at his school in the old times was a little practical knowledge, won at first hand in the dissecting room and at the bedside, a great many talks about what his professors had seen or read about, and much advice as to what he had better do under certain specified conditions. The progress of science and the methods of research have gradually led to a nearly complete reversal of this programme. To-day the burden of medical teaching lies in the endeavor to afford to the student the opportunity to see for himself the things and processes which concern the human body both in health and disease, to teach him to study these logically in all the light which any phase of science can throw upon them, and so to make of him at last, not so much a storehouse of knowledge and of opinion and of views won by others, as a personal gleaner of knowledge at its sources and a creator of opinions which are a part of his own intellectual life. Thus equipped, his emergencies can be met with the fairest assurance of success, and his observations and experiences become available in shaping to fairer proportions the science to which his professional welfare is so closely linked. Perhaps the one thing which, more than all else, has led to this great change in the status of the medical school is the conception, now clearly formed, that disease is not a thing, a possession, a visitation, but only a condition of abnormal function in the human body. It is now seen that a comprehensive knowledge of the human body can be achieved only through a study of the lower and simpler forms of life, by the use of methods which the study of the more exact sciences has shown to be universally imperative, and in the light which facts gleaned in inanimate as well as animate domains throw in increasing floods upon the intricate problems of the body's structure and mechanism and performances.

But the medical school of to-day, when conducted in the light of modern science, is more than a manufactory of doctors, however large or excellent—to borrow the commercial phrase—may be its yearly output. New and intricate problems crowd fast upon the devotee to the science and art of medicine, and are freighted often with the issues of life and death. And so about the medical school as a teaching institution, and closely woven into its motives and practice and highest achievement, are varied lines of research fostered both in the laboratories and at the bedside, and which constitute at last its highest necessity for rich endowment and its strongest claim to public esteem.

Thus it has come about that a medical school to-day can most directly and most fully realize its aims under the broadening and sustaining and stimulating influences which gather about a great university. And thus it has come about that the College of Physicians and Surgeons, which had won an enviable position among the preparatory medical schools in the old days, which had been able to conform, in large measure, to the requirements of the new outlooks in medical science and medical teaching, through wise and far-seeing private beneficence, finds itself at last in close touch with the University spirit and aims with which Columbia faces the future.

The entire rearrangement and extension of the curriculum in the Department of Medicine, the great development of laboratory work in the anatomical, physiological, chemical, pathological, and bacteriological laboratories, the increased facilities for clinical teaching and the new organization of the same, and the greater utilization of the various hospitals to which the College has access for the purposes of bedside teaching, have all combined to render the present course of medical education more complete in every particular than it was in 1890, at the time of the union of the College of Physicians and Surgeons with Columbia University.

In order that the readers of the BULLETIN may obtain some knowledge of the work that is being done at present in the

Medical Department, it has been thought best to publish in the succeeding numbers, first, sketches of the various departments, with descriptions of the laboratories and facilities which they offer both to the general student and to the special investigator desirous of conducting original researches; second, reviews of the work that has been undertaken within the past few years and that is now going on in each department; and third, a description of the plans for future work. That the entire work of the Medical Department may be appreciated, a brief sketch of the course provided by the new curriculum, with special reference to its progressive character, is here presented.

There is a certain necessary order in the subjects of study in the medical course. In order to treat disease successfully, either medically or surgically, the student must be in possession of a knowledge of the body in a state of health. Otherwise the significance of departures from the healthy condition will not be readily appreciated. At the beginning, therefore, of the course of medicine, and for the first two years of that course, the time of the student is largely occupied in gaining a knowledge of the anatomy of the body. This involves not only a study of the general appearance of the body, its muscular system, its bony framework, and the mechanisms involved in movement, but also of all the internal organs which carry on the processes of life, and of the nervous system which regulates and controls all the other organisms. It is not only necessary that these should be studied separately; it is also necessary that their mutual relations should be well understood. It is furthermore essential that this knowledge of structure should extend to the very finest constituent cells of the organs, and hence an examination of all living tissues under the microscope (a study of histology) goes hand in hand with that of gross anatomy.

At the same time the working of these mechanisms, the manner of activity going on in the structures studied, is considered in the physiological department. And, in as much as the majority of vital processes are attended by chemical

changes, it is evident that the course in chemistry naturally coincides in time with that of anatomy and physiology. When these three fundamental departments are mastered, the student can advance to the study of those abnormal conditions in the structure, functions, or chemistry of the system, which produce the symptoms of disease. Hence a diagnosis of medical and surgical diseases from the theoretical standpoint naturally follows the fundamental courses in the second and third years. At the same time the study of those substances which nature furnishes as remedies is pursued. For, if the action of a drug in stimulating or depressing the action of a bodily organ is clearly comprehended, its possible application to a condition of abnormal function in that organ may then be appreciated. The chemical knowledge already gained here comes into play, and is particularly useful in the study of such subjects as the effects of poisons and the use of antidotes. Thus, in the second and third years, the study of diseases and that of remedies go hand in hand.

It is not sufficient, however, simply to recognize the existence of diseased processes in an individual, or to know the combination of symptoms that make up any one disease; it is necessary to understand thoroughly the underlying changes in the organ characteristic of each disease, that is, the changes in the structure visible under the microscope taking place in each organ when it is the subject of disease. This is included in pathology. In this way the significance of symptoms can be understood and the limits of therapeutic endeavor can be appreciated. Thus pathology forms an important element in the course of medicine in the later stages of that course. But it has been one of the glories of pathology within the past decade to have discovered some of the causes of disease as well as the changes going on in disease. These causes in a number of diseases are microscopic organisms which take root and prey upon the body, causing both symptoms and pathological changes. A study of these organisms, of their various forms as recognized under the microscope, of their various effects upon the body di-

rectly, are included in the study of bacteriology. This study, therefore, goes hand in hand with pathology, and, at the same time, throws light upon the study of medical cases and of many surgical diseases. Here the importance of the prevention of disease by proper hygienic and sanitary precautions comes to light, and the student begins to realize that he is to become the guardian and guide of the community as well as its helper in distress.

After the student has mastered these various subjects, knows the causes likely to produce disease, the effect of those causes upon the living organism when at work, the symptoms produced in the course of disease and their grouping, and the remedies which may be called in to cure the disturbances of function, he goes on to the clinical application of these elements of medical knowledge in the recognition of disease in patients. It is a very different thing to know the nature of pneumonia from a theoretical standpoint and to recognize the existence of pneumonia in a given individual. The latter can only come by frequent examinations of a person suffering from pneumonia, so that the impression which the disease itself makes under careful observation will correspond to the picture of the disease as gained from the textbook and lecture. The study of clinical medicine and surgery, therefore, is absolutely essential to the completion of any course of medical instruction, and the greater the facilities for such clinical instruction, the greater the number of patients that any one student is enabled to see, the more complete will be his personal experience and knowledge of disease from the practical side.

This practical clinical instruction is given in part during the third year of the course of medicine, and occupies the entire time of the student during his fourth year. There are very many forms of disease which do not confine the individual to his bed, or even to the house, and these forms can all be seen among the large number of patients who apply daily at the Vanderbilt Clinic. There is, probably, no clinic in the world, which, in point of number of patients or varieties of

disease, can successfully compare with the Vanderbilt Clinic connected with the Medical Department. In the past numbers of the BULLETIN statements have been made from time to time with regard to the number of individuals annually treated in this Clinic, and it may be stated that these numbers are increasing constantly. Almost every form of disease which is prevalent can be seen within its walls. Every specialty in medicine has its representative upon the Faculty, and in every specialty, as well as in general medicine and general surgery, the students not only are instructed by general demonstrations given to the entire class by the professor, but they also have special instruction in divisions of ten to twenty men each, given in the spacious rooms of the Clinic by the Chiefs of Clinic. In this manner each student has an opportunity to examine patients suffering from the most varied forms of medical or surgical disease, and thus gains an experience in the recognition of the numberless disorders of function which was formerly attainable only by years of practice. The delicate disorders of the eye and ear, the hidden affections of the throat and other cavities of the body, the obscure diseases of the nervous system and of the mind, as well as the more demonstrable diseases handled by the surgeon, fractures, wounds, and tumors, all may be studied practically at the Clinic.

The severer types of disease, which confine patients to the bed, are studied in the hospitals, the arrangement of the new curriculum providing that every student shall spend two hours every morning during four months of his course in bedside study in the wards of the hospitals. Thus the theoretical side of medicine is completed by a practical knowledge of disease, and the student, on graduating, goes away from the college with an equipment in the art as well as in the science of medicine.

In the third and fourth years instruction is also afforded in the subject of obstetrics, and in this study as in the others the theory is completed by practical instruction at the Sloane Maternity Hospital. This hospital affords every facility to the

student for acquiring skill in this special art, and gives him a knowledge of the difficult and complicated conditions which the obstetrician has to meet, which he could obtain only in such a hospital.

It will be evident from this brief sketch of the course in medicine that the curriculum has been so modified and extended as to make the study thorough and complete, and the grouping of its themes logical, and that, throughout, the student is closely in touch on every hand with the stimulating influences of a rapidly progressive science.

T. MITCHELL PRUDDEN

M. ALLEN STARR

THE GERMANIC LANGUAGES AND LITERATURES AT COLUMBIA UNIVERSITY

The comprehensive study of the Germanic languages and literatures, or, as the Germans themselves conveniently characterize the whole subject, of *Germanistik*, at Columbia, under the Germanic Department, has been a gradual evolution from the study of modern German alone under a single instructor, who first offered such a course in 1784, on the reorganization of the College after the Revolution. This first professor of German was John Daniel Gross, S.T.D., at the time a trustee of the College. It was not until 1843, however, that the department had a permanent existence.

After the resignation of Professor Gross, in 1795, instruction in German was allowed to lapse until 1830, when it was revived with Frederick C. Shaeffer, S.T.D., as professor. He held his office but a single year, his successor being William Ernenputsch, who resigned in the year of his appointment. Another interregnum occurred until 1843, in which year the Gebhard Professorship of the German Language and Literature was established upon a bequest made by Frederick Gebhard, Esq., and German became a part of the College course, obligatory upon all students until 1847, when

the attendance of the two higher classes was made voluntary. John Louis Tellkamp, J.U.D., the first incumbent of the chair, was succeeded that year by Henry I. Schmidt, S.T.D., who held it until 1880. During the incumbency of Dr. Schmidt, who also gave instruction in Grecian History and Roman Antiquities to the Freshman class, and in Grecian Antiquities to the Sophomore class, German was made a voluntary study in all classes of the College.

The modern history of the department began, in 1880, with the appointment of Charles Sprague Smith as Gebhard Professor of German, with whom the late Hjalmar Hjorth Boyesen was associated as instructor in 1881. In 1882, although Mr. Smith, as Professor of Modern Languages and Foreign Literatures, still gave instruction in German, Mr. Boyesen became Gebhard Professor. The year after, William H. Carpenter was associated with him as Instructor in German and the Scandinavian Languages, which was the *personnel* of the department until 1891, when Mr. Eugene H. Babbitt was added to its force as instructor. The subsequent history of the department, with the death of Professor Boyesen and the appointment of Professor Calvin Thomas, of the University of Michigan, to the vacant chair of Germanic Languages and Literatures, is of too recent date to need more extended recapitulation. At present the corps of instruction consists of two professors, an instructor, and a tutor.

The curriculum under the department has grown commensurately. The circulars for 1897-8 announce fourteen courses, some of which have more than one section. The total number of hours of instruction per week is no less than forty-two and, with the possible multiplication of sections, it may be even more. Instead of modern German alone, there are included courses in the German language and literature from all periods, in Gothic and the various Scandinavian languages, and in the comparative philology of the whole Germanic group.

In the elaboration of a curriculum in the Germanic languages in any American institution, the preëminent place

must, of necessity, be given to German because of the position of both language and literature among the dominant forces of modern culture. Ten of the courses, accordingly, are courses on German in some one phase or other of its use. Several considerations have determined their special character. In the first place, under the new curriculum every candidate for the degree of Bachelor of Arts must have a reading knowledge of French and German. As the time is not yet ripe for demanding, under all circumstances, a preparatory knowledge of both languages from the secondary schools, it is necessary to give elementary instruction in both languages in the College. Under the new curriculum, Freshmen who do not present German at entrance are obliged to take this elementary course. Subsequently, they are given a choice of electives, all on the language side, but bearing in several directions: Course II, selected works of the classic authors, Goethe, Schiller, and Lessing; Course III, works of a historical and biographical character; and Course IV, various scientific writings to illustrate the technical vocabulary. To students of history and political science in particular, who may possibly pursue the language no further, Course III would especially appeal, and should furnish them with an available reading knowledge of German sources. Course IV, in the same way, should be taken by students who intend to specialize in science. Course II is, *per se*, the literary course, and it or III is to be taken by students who intend still further to pursue the course in German. The time for all this language instruction may be materially shortened by specially prepared students. German, under the more liberal conditions of the new curriculum, may be offered as a preliminary subject in June. If, on entrance, the student shall then take a further examination to cover the whole of the elementary work, the elective language courses may be even taken in the Freshman year, and the way thus be made clear for almost any amount of German in the course.

After the completion of the language courses as a fundamental preparation, the student may work in either of two

directions, on the literary side specifically or on the linguistic, or, if he should desire it, on both together. Courses V and VI treat, the one, the general history of German literature, and the other, Goethe's *Faust*; Courses VII and VIII are linguistic, the one a course wholly in German intended to give facility in speaking and writing the language, the other a comprehensive history of its development and use. A still more advanced literary course, which presupposes an abundant preparation, is on the great writers of Germany—for 1897-98, Lessing in the first half-year, and Goethe in the second. A Seminar will still further round out the instruction in German for those who have made it a special study. Old High German poetry will be the subject for the first half-year, and Middle High German poetry, in certain phases, for the second.

In the other Germanic languages it is intended to make the instruction as comprehensive as existing conditions will allow. Gothic, which the circular of the department calls the Sanskrit of the group, a knowledge of which is essential to the scientific study of the other Germanic languages, including English, as well as to general comparative philology, will hereafter be given every second year. Icelandic, scarcely less important for its philological bearings, and vastly more important through its position as the oldest dialect of the Scandinavian group of which any considerable remnant has been preserved, and on account of the intrinsic value of its incomparable literature, is given every year with alternating elementary and advanced courses. Modern Swedish and Danish are hereafter to alternate with Dutch in a cycle of three years, so that it will be possible for a student to take any one or all of them, if he chooses, during his course. These last courses it is proposed to make comprehensive, in that in each one a general survey in lectures of the history of the literature will follow upon an elementary course in the language with readings from representative writers. Swedish will be given in 1897-98, Danish the succeeding year, and Dutch for the first time the year after.

On the purely philological side, a course of lectures is offered each year, intended to explain in detail the historical development of the science of Germanic philology, its terminology, and the linguistic conditions upon which it is based. This course should also be of value to students of any branch of philology in the University, since, to a certain extent, it must necessarily cover common ground.

The whole curriculum of the department, it is thought, shows almost absolute correlation within its limits, although there are, from the nature of the case, many ways in which it can still be greatly broadened and strengthened. It is possible under it to get an available knowledge of each and every member of the Germanic group and of the whole group in its inter-relations, and there is an opportunity to specialize in several directions, if that be the thing desired. In the elaboration of the German courses within the College, what has been held primarily in view is such instruction as shall enable the student to use the modern language with facility in reading and in writing, and to give him an acquaintance with the masterpieces of German literature. It is not the policy of the department to attempt to give extended instruction in the mere art of speaking the German language. This is a matter which, it is believed, does not properly belong to college instruction, and in which, under existing conditions, it is impossible to arrive at satisfactory results. Something is done, as far as it is possible, to give students the opportunity to hear the language spoken and thus to learn to understand it. Several of the courses are conducted in German, and in all of the language courses proper, German is read or spoken to some extent, with attention to matters of pronunciation.

It is possible, however, in New York for a student who desires to give particular attention to spoken German to find opportunities that in some directions can scarcely be surpassed in many German cities. At the excellent German theatre in Irving Place it is customary to give weekly, in addition to the ordinary repertorium of the modern stage, a popular rep-

resentation of some classical or well-known play, which is carefully and accurately presented according to German traditions. During this season have been produced, among others, Lessing's *Nathan der Weise*, and Schiller's *Wilhelm Tell*, *Maria Stuart*, *Kabale und Liebe*, *Die Räuber*, and *Wallensteins Tod*. There are a number of churches of various denominations in which the service is conducted in German, and a large German population which leads its own social life, with literary clubs, and various organizations to which admission can readily be gained by one who cares to secure it. To our own most excellent library facilities at Columbia University are also to be added a number of libraries in the city, in which are considerable collections of German books in all departments of literature, with extensive files of the periodicals and journals of the day.

WM. H. CARPENTER

EDITORIALS

The great hall which is to occupy a large part of the building shown in our illustrations will undoubtedly be a most important part of the University, and the Alumni have chosen wisely in selecting this as their gift to Alma Mater. There should be some one place in the University, and that a conspicuous one, especially identified with and expressive of the organic life, the moral and intellectual power represented in the past and present by the Alumni as a body. While the University in a technical sense is composed of its faculties, its schools, and its students, yet in a broader and perhaps a truer sense it includes also those who have learned the lessons which the University teaches, and have carried those lessons into the world at large. The history of the Alumni is the best part of the history of the University, and their personality is an integral and most important element in its prestige and influence. In according to the Memorial Hall so prominent a place among the new buildings, the Trustees have recognized in a most appropriate manner the relation of the Alumni to the University, and they, in their turn, in undertaking to contribute the fund necessary for its erection, are giving expression to that sense of loyalty and gratitude which every right-thinking man must feel towards the institution that has equipped him for his work in life. Instances are not infrequent of men who, having calculated the amount which their education has actually cost the College or the School from which they have received their degree, have subsequently returned a like amount in gifts, in satisfaction of what they regarded as a debt of honor. That every graduate owes such a debt is true beyond question, and the fact needs only to be brought home to the conscience to insure its generous recognition.

In February, 1892, a committee was appointed at a general meeting of the Alumni to coöperate with the President in effecting the removal of the college to the new site. The committee rendered effectual service in arousing public interest in the project, in securing legislation to prevent the opening of streets, and raising a considerable sum towards the purchase. The committee has been continued with a view to further action, and its determination to undertake to raise a fund for the building of an Alumni Memorial Hall

is the result of careful deliberation. A number of Alumni not members of the committee were consulted. The inquiry as to whether they favored a Memorial Hall as the gift of the Alumni to the University was met by almost unanimous expressions of approval, and subscriptions amounting to over \$30,000. At a meeting held in December last, a resolution that all Alumni of the University be asked to contribute to a fund for the erection of an Alumni Memorial Hall was formally adopted, and the following committee was appointed to organize a systematic canvass:

ABRAM S. HEWITT, Chairman;	FRANCIS S. BANGS, Treasurer, 100 Broadway;
NICHOLAS FISH, President of the Alumni Association of the College;	JOSEPH LAROCQUE,
M. ALLEN STARR, M.D., President of the Alumni Association of the College of Physicians and Surgeons;	GEORGE G. DEWITT,
WM. ALLEN SMITH, President of the Alumni Association of the School of Mines;	JULIEN T. DAVIES,
J. H. VAN AMRINGE,	B. AYMAR SANDS,
ISAAC N. SELIGMAN,	T. M. CHEESMAN, M.D.,
	W. BARCLAY PARSONS,
	EDWIN B. HOLDEN,
	JOHN B. PINE, Secretary, 63 Wall Street.

Circulars have been prepared and printed and, together with views of the buildings, are now being distributed. Among the Alumni of the College and of the School of Mines each class will have its own treasurer, and the class as a body, as well as the individual contributors, will be credited with the amount of its subscription. Every graduate can afford to contribute something to the fund, and no amount will be considered too small. It is hoped that the Alumni will give generously, but the object most to be desired is the universal participation of all Alumni in the gift.

The following gentlemen have consented to act as Class Treasurers for the College:

Hon. ABRAM S. HEWITT, '42; (Classes of '36-'43.)	WILLIAM H. BUTTERWORTH, '64;
JOSEPH LAROCQUE, '49; (Classes of '44-'50.)	WILLIAM G. LOW, '65;
Rev. MARVIN R. VINCENT, '54; (Classes of '51-'56.)	JULIEN T. DAVIES, '66;
WILLIAM LUMMIS, '59; (Classes of '57-'59.)	Dr. JULIUS SACHS, '67;
Prof. J. H. VAN AMRINGE, '60; (Classes of '60-'62.)	LUCIUS K. WILMERDING, '68;
MELVILLE BROWN, '63;	DAVID B. OGDEN, '69;
	FRANKLIN B. LORD, '70;
	Prof. BRANDER MATTHEWS, '71;
	Prof. JOHN K. REES, '72;

A. B. SIMONDS, '73;	CHARLES H. MAPES, '85;
B. AYMAR SANDS, '74;	JOHN V. BOUVIER, '86;
THOMAS S. ORMISTON, '75;	SAM SLOAN, '87;
ISAAC N. SELIGMAN, '76;	HENRY B. ELY, '88;
F. DELANO WEEKES, '77;	HAMMOND ODELL, '89;
FRANCIS S. BANGS, '78;	CORTLANDT F. BISHOP, '91;
JAMES A. LYNCH, '79;	THOMAS L. CHRYSTIE, '92;
W. FELLOWES MORGAN, '80;	WILLIAM B. DONNELL, '93;
REGINALD H. SAYRE, M.D., '81;	SHEPHERD KNAPP, JR., '94;
GEORGE B. PARSONS, '82;	FREDERICK COYKENDALL, '95;
ARTHUR L. LESHIER, '83;	ROGERS H. BACON, '96.
J. MAYHEW WAINWRIGHT, '84;	

Among the graduates of the Law School a committee is being organized, and the following gentlemen have consented to act as the Committee for the College of Physicians and Surgeons:

DR. WILLIAM H. DRAPER,	DR. CHARLES A. POWERS,
DR. F. P. KINNICUTT,	Denver;
DR. WALTER B. JAMES,	DR. GEORGE M. STERNBERG,
DR. HENRY M. LYMAN,	Surgeon-General, U. S. A.;
Chicago;	DR. M. ALLEN STARR,
DR. HARRY M. SHERMAN,	DR. T. MATLACK CHEESMAN.
San Francisco;	

The School of Mines Committee, which was appointed in 1895 to raise money for a building, and which issued an elaborately illustrated pamphlet descriptive of the new site, is coöperating with the General Committee. The School of Mines Committee consists of:

Prof. HENRY S. MUNROE, '69,	WHEATON B. KUNHARDT, '80,
<i>Chairman;</i>	<i>Secretary and Treasurer;</i>
WILLIAM ALLEN SMITH, '68;	WM. BARCLAY PARSONS, '82.
Prof. FREDERICK B. HUTTON, '76;	

The Class Treasurers appointed by the School of Mines Committee are:

JOHN A. CHURCH, '67,	Prof. FRED. R. HUTTON, '76,
WILLIAM ALLEN SMITH, '68,	SYLVANUS A. REED, '77,
Prof. HENRY S. MUNROE, '69,	WILLARD P. BUTLER, '78,
ELWYN WALLER, '70,	GEORGE C. STONE, '79,
Prof. P. DE P. RICKETTS, '71,	WHEATON B. KUNHARDT, '80,
PETER T. AUSTEN, '72,	HOWARD VAN SINDEREN, '81,
JOHN T. WILLIAMS, '73,	WM. BARCLAY PARSONS, '82,
EBEN E. OLCOTT, '74,	ROBERT PEELE, '83,
CHARLES M. ROLKER, '75,	Prof. JAMES F. KEMP, '84.

LEON MARIÉ, '85,
HOBART PORTER, '86,
LEA McL. LUQUEER, '87,
HENRY PARSONS, '88,
DANIEL LeR. DRESSER, '89,
JAMES M. HEWLETT, '90,

GUSTAVE R. TUSKA, '91,
ROBERT D. WHITE, '92,
GEORGE H. CLARK, '93,
H. K. MASTERS, '94,
CHARLES D. SHRADY, '95,
H. A. PROSSER, '96.

The first official recognition by the Trustees of an obligation on their part to provide for the physical development of the students is contained in the following resolution, adopted April 1, 1867: "*Resolved*, That a sum not exceeding two hundred dollars be appropriated to be used under the direction of the acting president, to provide bats and other necessary instruments and appliances for the sports and exercises of the students in the open air."

So far as we are aware this is the first instance of any college or university contributing directly from the funds of the corporation for the support of athletics, other than by the erection of a gymnasium. The precedent, established in 1867, has been consistently followed, and the annual appropriation has been gradually increased. When the boathouse on the Harlem was built in 1874, at a cost of about \$20,000, the Alumni contributed some \$16,000 and the Trustees \$4,000, and the latter assumed the responsibility of keeping the property in repair. Upon the sale of the property, in 1896, the proceeds were applied to the cost of building the dock upon which the Edwin Gould Boathouse was subsequently erected. This also the Trustees have undertaken to maintain. Since the purchase by the Alumni Association, in 1891, of the Athletic Field at Williamsbridge, the Trustees have paid the interest upon the mortgage on the property, the usual annual appropriation for this and other athletic purposes being \$5,800. In December last the Trustees accepted a deed of the field from the Alumni Association, thereby evincing an intention to make permanent provision at Williamsbridge or elsewhere for field athletics. Such having been the attitude of the Trustees during the last thirty years in respect to athletics, their recent action in determining to proceed with the construction of a gymnasium upon the new site is eminently consistent, and the scale and completeness with which the building has been planned are worthy of the liberal and progressive spirit which it indicates. The Committee on Buildings and Grounds, in a report recommending this action to the Trustees, summed up the reasons for building a gymnasium as follows:

"A still further requirement remains to be met, viz.: that of physical exercise. The need for this will at once be recognized as being especially urgent in a city university. So closely are physical and intellectual development connected, that a university which seeks primarily to afford mental training cannot afford to disregard the physical side. A gymnasium for Columbia, therefore, cannot be regarded as a luxury, but is a legitimate part of the University, and is, in some respects at least, fully as essential as any of the purely educational buildings. Circumstances have heretofore made it impossible for Columbia to offer its students an opportunity for physical exercise and training except under very limited conditions. Your Committee regard it as one of the great advantages to be gained by the removal to the new site that an opportunity can there be afforded for giving adequate training to the body as well as to the mind, and they believe that such training will tend directly to a higher standard of scholarship and better intellectual work."

As to the soundness of this reasoning there can be no question, and that the establishment of systematic physical training as a part of the course of every student will justify the anticipations of the Committee we have not the slightest doubt. It is essential, however, that such training shall be systematic, and that all students, not solely candidates for the crews and teams, shall benefit by it. The men least fitted for such positions are the ones who most need the exercise, and to develop their weakness into strength should be the first consideration. Harvard, Amherst, Brown, and Cornell have all, in a greater or less degree, afforded their students opportunities for physical culture under scientific direction, with the result of securing a marked improvement in the average physique of the students.

The new gymnasium at Morningside Heights will offer space and facilities unequalled elsewhere, and it only remains to utilize them to the best advantage. Whether voluntary attendance in the gymnasium will be so large as to be practically universal among the students is at least doubtful; on the other hand, an absolute requirement is open to objections. A medium course may perhaps be found in the system which, we believe, still obtains at Brown University, where time spent in the gymnasium counts as a part of the number of hours of required weekly attendance. Our system of treating two hours of laboratory work as the equivalent of one hour's attendance upon lectures suggests a ratio for crediting time spent in the gymnasium, and if thus applied, subject to a

reasonable limit as to the number of hours per week to be so credited, would doubtless render a "course in athletics" sufficiently popular. But whether the use of the gymnasium be required, elective, or optional, it must be evident that the curriculum should be so arranged as to make it possible for every student, whether in the College or in any of the Schools, to have at least one hour free for daily exercise. The gymnasium itself stands as a monument of the fact that it is the duty and the intention of the University to give "adequate training to the body as well as to the mind," and whatever may be the exaction of conflicting courses, whatever sacrifices may be demanded of the lecture room or laboratory, it should be remembered that health and strength come before study and scholarship, and that physical requirements must be supplied before the best results of intellectual effort are attainable.

The opening of the new hall of Vertebrate Palæontology in the American Museum of Natural History in December last, marks the results of five years' development of this department under the curatorship of Professor Osborn. Collections valued at \$72,000 have been brought together, partly by vigorous exploration in the Rocky Mountain region, partly by the purchase of the famous collection of Professor Cope. There are 10,275 specimens, from the superb skeleton of the titanotherium to the minute teeth of the Mesozoic mammals. The methods of arrangement and exhibition are largely original. What is of most direct interest to the University is that this is now one of the leading collections of the world, and by the coöperation which exists between the Museum and the University, students will be attracted to New York for the pursuit of this important branch of morphological research. One regular course of university lectures is now being delivered in the Museum.

The establishment of a great Zoölogical Park promises to be another important addition to the educational opportunities of New York City. A year and a half has been spent in selecting the site, developing the plans, and studying the finest zoölogical gardens abroad. The Board of Managers has been strengthened by the addition of representatives of Columbia University, of the Botanic Garden, and of the American Museum of Natural History. Representatives of all the other educational institutions are upon the

Scientific Council. A year ago Professor Osborn was elected Chairman of the Executive Committee, and during the illness of the President, the Hon. Andrew H. Green, he has been obliged to assume the chief responsibility of management. The site finally chosen by the Executive Committee, under the expert advice of Mr. Hornaday, is the southern portion of Bronx Park, including 261 acres upon either side of the Bronx river, and within easy distance of the Botanic Garden. It remains to secure the unanimous approval of the Sinking Fund and Park Commissioners, and to raise \$100,000 by subscription, before the Society can begin the scientific and artistic development of the Park.

The first expedition from the Department of Zoölogy to Puget Sound has proved to be so fruitful in results that preparations are being made to continue the work upon the Pacific Coast upon a larger scale during the coming season, provided that funds can be secured for the purpose. Materials collected in 1896 have been sent out to zoölogists in all parts of this country, to the University of California, to Michigan, and to laboratories nearer home. The rare fishes and embryos secured by Professor Dean are greatly sought after in Europe, and specimens are being sent to the Oxford University Museum, to the British Museum of Natural History, London, and to various points upon the Continent. During the coming year the party proposes again to make Puget Sound its base, and to proceed northwards to Sitka, Alaska, where it is believed the animal and plant life will be found still more rich than upon the Sound. Correspondence has already begun and a subscription towards the expense of this expedition, which will cost about \$1,500, has been started. The fauna of the Pacific Coast is of exceptional interest, because it has been comparatively little studied. The opportunities for the discovery of new forms are very much greater than along the comparatively well-known Atlantic Coast.

The extension of the University work into this field calls attention to the need of especial endowments for exploration and the publication of results. American zoölogists are at a great disadvantage, as compared with their European brethren, in the matter of facilities for publication. We have only one journal which offers adequate lithographic illustration, and that is at present so over-

crowded that authors have to wait for one or two years for space. No more effective gift could be made to the University treasury than a fund to be used exclusively for field exploration and for the illustration of memoirs. Printing is already provided for generously by the New York Academy and other scientific societies.

The University is not often favored with a disputation so vigorous as that which the question of a crew or no crew has recently involved, but if it has served to make clear the merits of the case a valuable result has been accomplished. The eminent but extraneous representative of muscular Christianity, who adjured the members of the Union to row, if they were beaten out of their stockings, missed the point entirely. It was not a question whether Columbia was afraid to row, but whether she could afford to row. As to the supply of pluck, there was no doubt whatever; but the question of expenses, viewed in the light of perennial deficits, was justly a subject of serious apprehension, and was and is capable of being answered in but one way. "Pay as you go, and if you can't pay, don't go," is the only rule applicable to the case, but it is the one rule which has been most consistently disregarded for years past. Crews have come and crews have gone, but almost invariably they have left behind them a tale of debt. This is the evil which has brought our boating affairs into disrepute, and this is the evil which must be remedied. At other colleges the profits of football have helped to pay the expenses of the crew, but at Columbia subscriptions have been the only recourse, and the burden has fallen too heavily upon the graduates. A few men have responded again and again in the most generous manner, but they have become discouraged and disgusted by the extravagance and recklessness which have characterized the management of the crew and its finances. The undergraduates have risen to meet the present crisis with an encouraging degree of enthusiasm and liberality. It has been shown that there are plenty of men of the right sort who are ready and anxious to row, but to regain the confidence of the Alumni it must be demonstrated that subscriptions will be expended only for the necessary and legitimate expenses of the crew as a body, and that no debts will be incurred beyond the resources of the treasury. In determining what are proper expenses, it should be remembered that the oarsmen who have done most to earn for Columbia a reputation in boating, paid for their own "keep," and that they and the

men of their time have but little sympathy with the modern 'Varsity oar, who expects to be lodged, boarded, uniformed, and generally maintained at the expense of the Union. In the old days it was thought a sufficient honor to be on the 'Varsity crew, and the idea that the undergraduate who condescendingly gives his time to rowing is doing a favor to the University, and is therefore entitled to be supported at the public expense, will find but little acceptance either among students or Alumni. The attitude of the students will largely determine that of the graduates, and the former need only prove that they are willing to do their share and that they have good pluck and sound common sense to insure the cordial and generous support of the Alumni.

The Bureau of Education has compiled the following statistical table to show the number of resident graduate students taking either non-professional or professional courses of study in American colleges and universities. The figures are taken from the official publications of the several institutions named for 1895-96. Slight analysis will show that in some respects the figures are misleading because they are recorded from different points of view. One institution, for example, includes the attendance at its summer school; another counts as resident graduates persons who are enrolled in a separate institution in the same city or town for the primary purpose of pursuing a professional or technical course of study, but who attend university lectures for one or more hours each week. Obviously such statistics need much interpretation. But this table, which is reprinted from the *Educational Review*, is a most valuable one.

1895-96

POST-OFFICE ADDRESS	NAME OF INSTITUTION	Resident graduate students	Professional students having degree	Total
1	2	3	4	5
Berkeley, Cal.....	University of California.....	115	84	199
Stanford University, Cal...	Leland Stanford Junior University....	102	..	102
Boulder, Colo.....	University of Colorado.....	20	..	20
Middletown, Conn.....	Wesleyan University.....	15	..	15
New Haven, ".....	Yale University.....	176	199	375
Washington, D.C.....	Catholic University of America.....	34	22	56
".....	Columbian University.....	40	56	96
".....	Georgetown University.....	12	62	74
Champaign, Ill.....	University of Illinois.....	26	..	26
Chicago, ".....	University of Chicago.....	628	182	810
Evanston, ".....	Northwestern University.....	20	194	214
Bloomington, Ind.....	Indiana University.....	54	8	62
Iowa City, Ia.....	State University of Iowa.....	47	56	103
Lawrence, Kan.....	University of Kansas.....	26	..	26
New Orleans, La.....	Tulane University.....	87	..	87
Brunswick, Me.....	Bowdoin College.....	..	16	16
Baltimore, Md.....	Johns Hopkins University.....	253	88	341
Amherst, Mass.....	Amherst College.....	3	..	3
Boston, ".....	Boston University.....	129	208	337
Cambridge, ".....	Harvard University.....	269	604	873
".....	Radcliffe College.....	44	..	44
Wellesley, ".....	Wellesley College.....	45	..	45
Williamstown, ".....	Williams College.....	2	..	2
Worcester, ".....	Clark University.....	42	..	42
Ann Arbor, Mich.....	University of Michigan.....	59	139	198
Minneapolis, Minn.....	University of Minnesota.....	137	58	195
University, Miss.....	University of Mississippi.....	6	..	6
Columbia, Mo.....	University of the State of Missouri....	25	2	27
St. Louis, ".....	Washington University.....	..	46	46
Lincoln, Neb.....	University of Nebraska.....	38	16	54
Hanover, N. H.....	Dartmouth College.....	9	27	36
Princeton, N. J.....	Princeton University.....	119	..	119
Clinton, N. Y.....	Hamilton College.....	1	..	1
Ithaca, ".....	Cornell University.....	151	26	177
New York, ".....	Columbia University.....	207	405	612
".....	New York University.....	76	124	200
Poughkeepsie, ".....	Vassar College.....	10	..	10
Syracuse, ".....	Syracuse University.....	23	7	30
Chapel Hill, N. C.....	University of North Carolina.....	7	14	21
Cincinnati, Ohio.....	University of Cincinnati.....	30	..	30
Cleveland, ".....	Western Reserve University.....	13	28	41
Columbus, ".....	Ohio State University.....	29	12	41
Delaware, ".....	Ohio Wesleyan University.....	25	..	25
Bryn Mawr, Pa.....	Bryn Mawr College.....	52	..	52
Easton, ".....	Lafayette College.....	27	..	27
Philadelphia, ".....	University of Pennsylvania.....	172	324	496
Providence, R. I.....	Brown University.....	29	..	29
Knoxville, Tenn.....	University of Tennessee.....	9	7	16
Nashville, ".....	Vanderbilt University.....	39	55	94
Austin, Tex.....	University of Texas.....	14	36	50
Burlington, Vt.....	University of Vermont.....	2	14	16
Charlottesville, Va.....	University of Virginia.....	20	51	71
Madison, Wis.....	University of Wisconsin.....	80	..	80

The Academy of Design will be a most welcome neighbor of the University upon Morningside Heights. Doubtless the building of the Academy upon its new site on Amsterdam Avenue, between 109th and 110th Streets, will add another fine architectural feature, but it will be even more of an acquisition as associating the Heights still further with all that is noblest and best morally and intellectually. Religion, learning, and philanthropy have already claimed this, the most beautiful portion of the city, as their own, and it is most fitting that the circle should be made complete by the inclusion of the fine arts. By all who are especially interested in the advancement of the arts the proximity of the Academy to the University will be regarded as a most fortunate circumstance, as suggesting the possibility that at some time in the future their forces will be united. The two-fold character of the Academy would seem to render such an association entirely possible. The holding of exhibitions and the election of artists to the distinction of membership are functions which, together with its independent corporate existence, the Academy should always preserve, but from its inception the Academy has been an educational institution. There has never been a time when it has not given instruction, and usually to large classes. Between the Academy as an educational institution, and the University, there is or should be a natural affinity. Columbia has for years past conducted the most successful school of architecture in this country, and since all the arts have many requirements in common, at least in the earlier phases of instruction, it would seem that the Architectural Department of Columbia, and the classes in drawing, painting, and modelling of the Academy, might well be combined to form a School of Fine Arts.

UNIVERSITY NOTES

THE LIBRARY

The following inscription is to be carved upon the entablature above the portico of the Library: "King's College Founded in the Province of New York by Royal Charter in the Reign of George II; perpetuated as Columbia College by the People of the State of New York when they became Free and Independent; maintained and cherished from Generation to Generation for the Advancement of the Public Good and the Glory of Almighty God." The

language of the inscription is, to a considerable extent, an adaptation of that carved upon the cornerstone of King's College: "Hujus Collegii, Regalis dicti, Regio diplomate constituti in Honorem Dei O. M. atque in Ecclesiae Reique Publicae," etc. Upon the frieze of the portico will be carved: "The Library of Columbia University."

THE COLLEGE

It is believed that the H. C. Bunner Gold Medal, for the awarding of which annually the Trustees have accepted a sum of \$1,000 subscribed by the dead author's friends—is the first prize ever established in any American University especially to encourage the study of American literature. The competition is open to all candidates for a Columbia degree, thus including the students of Barnard and of Teachers College. The subject for this year is "American Satiric Poetry," and if any worthy essay is submitted before May 1st the medal will be awarded for the first time at Commencement in June. The subject for next year is "The Influences which affected both Hawthorne and Poe;" for 1899 it is "The Oratory of Daniel Webster," and for 1900, "The American Indian in American Poetry." This list of subjects seems to show that neither prose nor verse will be neglected, and neither research nor criticism. In view of the facts that the subjects are announced several years in advance and that the competition is open to graduates, it is quite possible that the medal will be won, now and again, by other than Columbia students; and it is greatly to be desired that one or two smaller prizes be offered for the best essay by an undergraduate of the College.

The subjects announced this year for Junior Honors in Mathematics are: (1) Quadric Surfaces; (2) Trilinear Coördinates; (3) History of Analytical Geometry; (4) an account of the different methods available for the measurement of the acceleration of gravity; (5) the subject of "Centripetal Force," as discussed in Newton's *Principia*, Section II, and its application to Problems 3 and 4, Group XVIII, and Problems 1 and 2, Group XIX, of Frost's *First Three Sections of the First Book of Newton's Principia*.

The following subjects of theses have been selected by the members of the graduating class: Causes and Effects of Metamorphism in Rocks, On the Nature and Function of the Bank Note, Geologic Time, Shakespeare in France from 1760 to 1830, John Brown and his Work, An Analysis and Critique of Chapter One of

Herbert Spencer's *Education*, What Knowledge is of Most Worth, The Burial Customs of the Ancient Greeks, The History of the Thirteenth Amendment of the Constitution of the United States, The Transition of New York from Colony to State, Goethe's Mephistopheles: the Sources and Evolution of the Conception, The Epic of King Arthur, Prose-poetry in the Early Romantic Movement in France, The Dumb Show in Elizabethan Drama, The Use of Rhyme in Vergil, The Development of the Modern Dry Plate in Photo-Chemistry, Electrolysis, The Dramatic Views of Diderot and Rousseau, Folding and Faulting of the Earth's Crust, The English Naval Poems, The Use of the Supernatural in Shakespeare, The Use of Disguises in English Drama, The Nature, Origin, and Authority of Conscience, The Personal Development of Faust, Play within Play in the Elizabethan Drama, On the Cranial and Branchial Character of the Chimæroid Hydrolagus Collei, The Nature, Origin, and Authority of Conscience, The Monroe Doctrine: what it is, The Political Philosophy of John Stuart Mill, The Hartford Convention, The Influence of Coleridge upon English Thought, The Presidential Election of 1844, John Winthrop and the Settlement of Massachusetts, The General Morphology of the Digastric Muscle, The Elizabethan Sonneteers, Cavour and Mazzini: a contrast, Syriac and its Dialects, The History of Photography, A Historical Sketch of the Development of Photography, The Trial of Huss and its Effect upon Europe, Pope's Verse Form as Differentiated from Dryden's, The Historical Novel in France and the Influence of the Waverley Series upon its Development, Archimedes and his Discoveries, The Lincoln-McClellan Controversy, The Political Philosophy of Alexander Hamilton, A Critical Study of Voltaire as Historian, with Especial Reference to his History of Charles the Twelfth; The Oregon Dispute, The Nature, Origin, and Authority of Conscience, The History of Slavery in the Thirteen American Colonies, The Continental Congress from its Origin to the Declaration of Independence, Roger Williams and the Settlement of Rhode Island, The Lewis and Clark Expedition, The Hutchinson Letters, Tennyson's Interpretation of Nature, The Petroleum Industry in the United States, The Development of the Vertebrate Type of Life in Geologic Time.

FACULTY OF APPLIED SCIENCE

The Faculty of Applied Science has with regret been compelled to receive the notice of the request of Professor Thomas Egleston,

Professor of Mineralogy and Metallurgy in the School of Mines, that he should be retired from active service.

Professor Egleston was the Senior Professor in the Faculty of Applied Science, and was the creator of the original School of Mines, from which the Schools of Applied Science of the University have been the outgrowth. He graduated as an Engineer of Mines from the *École des Mines* of Paris. Returning to this country, he realized that the time was ripe for a school in which the sciences of Chemistry, Geology, Mineralogy, Metallurgy, and Engineering might be taught to young men, with a view to fitting them to practice in the field of mining, which was then opening so promisingly and widely in the West. Up to this time (1863) the only education for such practitioners was to be obtained in Freiberg or Paris, and the conditions prevalent in both places were not those best adapted for the most successful training of men who were to practice in this country and under American economic conditions, which were so different from those in Europe. This undertaking was fraught with great difficulties, by reason of its novelty in this country, and the reluctance of a conservative body to experiment with methods for which there was little precedent experience to be a guide. The enterprise, however, was supported by citizens of New York, outside the College, and by the warm enthusiasm of certain gentlemen within it, so that permission was obtained to start the School of Mines in an experimental way. The success which it at once achieved was a surprise and an encouragement to all concerned. The first class was graduated in 1867, and from that year onwards the School of Mines became known throughout the country and abroad, and was the means of extending the knowledge of the University in places where it might not have otherwise penetrated. The success of the School of Mines idea was perhaps most prominent, so far as numerical popularity is a gauge, during the years between 1883 to 1885. At about this date the growth and development of Civil Engineering and Architecture commenced to make themselves distinctly felt, and since the year 1892 the numbers seeking the Course in Electrical Engineering have also been upon the increase. It was this tendency for the branches to outgrow the original trunk by reason of changes in economic and industrial conditions, and the great development along mechanical lines, which induced the setting off, in 1896, of the Schools of Architecture and Engineering and Chemistry from the parent stem, the School of Mines, whose name is still retained

as the name of the mining school, while the existence is recognized of the new schools which had grown up in the years of success attending the School of Mines which Professor Egleston had created. His withdrawal has been hastened by failing health; and proper resolutions of regret and sympathy were passed by his colleagues. The Department of Metallurgy will be conducted for the present by the head of the Department of Mining, working with and through the subordinate officers of instruction in the Department of Metallurgy.

The growth and development of the School of Mines and the affiliated schools of Chemistry, Engineering, and Architecture during the thirty years of its existence, have taken place under the incumbency of the Professor of Chemistry as Dean of the Faculty of the School of Mines. The recognition of the other schools has not added materially to the labors of the Dean of the Faculty of Applied Science, which conducts these schools, but Dr. Chandler has felt that the opportunities which are to open for the Department of Chemistry, as a Department of the University in Havemeyer Hall, at the new site, entitle him to be relieved, after so many years of devoted service, from the executive details which the complicated courses of instruction in Applied Science thrust upon the Dean of that Faculty. Against the earnest wish of all his colleagues he has insisted upon their accepting his resignation as Dean, in order particularly to devote himself to his chosen specialty even more than in the past. It will be a source of regret to all the graduates of the various Schools of Applied Science that one who has been so closely identified with it during all these years should withdraw from the relation which has been so acceptably filled. The duties of the Dean in the Faculty of Applied Science have always been particularly exacting by reason both of the number of students in the various courses, the interrelation of the courses to each other, and the conduct under one faculty of so wide a variety of different schools.

Department of Civil Engineering.—The general character of the work being done in the Department of Civil Engineering is not materially different from that of the preceding year, with the exception of substantial advances in two or three directions. Earnest efforts have been made, with a considerable degree of success, to commence such work of investigation as may be required in the graduating theses of the members of the fourth-class earlier in the year than heretofore. Original investigations in connection with

such thesis work is now well under way in the Cement Testing Laboratory, in the Laboratory of the Department of Mechanical Engineering, and in certain other special fields of engineering outside of the laboratories of the University. The early inception of this class of work promises to yield results of excellent quality, both in connection with practical engineering matters, and from the point of view of what may be termed "Engineering Physics."

In addition to these particular fields of laboratory work, the fourth-year students have for the first time pursued a fairly extended programme of practical operations in the hydraulic laboratory, which has been recently established in the Department of Civil Engineering. This hydraulic work has been of the nature of testing the discharge through the weirs or notches and other orifices, as well as of the determination of the coefficients of friction and other resistances in open channels of various forms and in pipes. Formulæ for the discharge of pipes and open channels have been established or verified in connection with the use of the hook gauge, and studies in the effects of variations in the slope of channel and character of wetted surfaces on velocity and discharge have been made under conditions identical with, or similar to, those met with in actual engineering practice.

Plans now being executed for the increase in hydraulic laboratory facilities will enable work hereafter to be done throughout a wider range even than has been attained this year. Practice in testing a considerable number of the more common types of water meters will be given at the beginning of the second session.

Many additions to the collection of materials used in the construction of roads and pavements have been made, and they have been used in the lectures of the past session. These specimens include sections of actual pavements of different varieties, and exhibit the best quality of present road and pavement construction.

Some extension of the course in railroad work has been made in pursuance of the intention ultimately to expand certain features of this work in the direction of such general subjects as railroad organization, rate making, and other administrative matters connected with the organization and management of railroad corporations.

FACULTY OF LAW

The Law School continues to show a steady growth in the quality as well as in the number of its student body. Notwithstanding the legislation of last year, requiring of special students the same

qualifications for admission as are prescribed for students entering regularly as candidates for the degree of LL.B.—the effect of which has been practically to eliminate the large class of half-educated special students—the membership of the school is larger by thirty-four than the total enrolment of last year. The growth of the Law School during the past three years is strikingly exhibited by the following table :

	1893-4	1894-5	1895-6	1896-7
First Year	79	104	143	183
Second Year	63	70	80	104
Third Year	69	50	60	67
Specials	36	41	40	3
	<u>247</u>	<u>265</u>	<u>323</u>	<u>357</u>

The school has, therefore, made an absolute gain of 110, *i. e.*, of 44½ per cent. in three years, although in the same time the raising of the standards of the school has had the effect of excluding a large number of undesirable students, whose presence this year would have increased the percentage of gain to at least 60.

The showing made by the above figures becomes doubly significant when it is observed that the annual additions to the school are mainly in the form of an increased first-year class, and that the contribution which a large first-year class makes to the strength of the school continues, in the form of larger second and third-year classes, throughout its course. The recent growth of the school as a whole, to which attention has been called above, is therefore less significant than the increase of the first-year class from 79 to 183 (a growth of 132 per cent.) in the same time.

The increase in the number of students who have received a college education is equally striking and gratifying. In 1893-94, the number of college graduates was 114, or 42 per cent. of the whole number of students in the school; in 1895-96, the number was 169, or 52 per cent. of the whole, while at the present time the number is 211, or 59 per cent.

Some changes in the force of instruction and in the arrangement of courses remain to be noted. Professor Henry W. Hardon, whose appointment as Professor of Law was noticed in a recent number of the BULLETIN, is taking all of the courses formerly given by Professor Starbuck. This includes common law pleading with the first-year class, quasi-contracts with the second year, and suretyship and mortgage, and wills and administration with the third year. The subject of private corporations, hertofore included in Professor Cumming's list of courses, is being taught this year by Professor

Keener, while the latter's course in equity with the third-year class, is in charge of Alexander Tison, A.M., LL.B., of the New York bar, formerly Professor of Law in the Imperial University of Tokyo, Japan.

FACULTY OF PHILOSOPHY

At the meeting of the American Psychological Association, held in Boston and Cambridge, December 29 and 30, Professor Cattell read a paper on "Researches in Progress in the Psychological Laboratory of Columbia University," and presented the report of the committee on physical and mental tests. Mr. Strong read a paper on "Mind and Body." Dr. Farrand was reëlected Secretary of the Association.

In the *Deutsche Zeitschrift für ausländisches Unterrichtswesen* for January, 1887, Professor H. M. Hughes, of the University of Wales, remarks: "Of all the pedagogical departments in the United States, that of Columbia College, New York, is perhaps the most satisfactory, and it is so because of the alliance between Columbia College and Teachers College. * * * The key-stone of the work is supplied by a remarkable school of observation and practice, in which the several professors are answerable for the instruction in their several branches. The union of this highly practical element with the theoretical preparation given in Columbia College, makes an almost ideal combination for the preparation and equipment of the future teacher."

A course of five public lectures on Anthropology and Ethnology was given at the American Museum of Natural History during the month of January, under the direction of the department of Anthropology. The lecturers were Professor D. G. Brinton, of the University of Pennsylvania; Dr. Otis T. Mason, of the United States National Museum, Washington; and Drs. Farrand, Boas, and Ripley, of the University.

Ludwig Bernstein, A.M. (Columbia), who has written, under the Germanic department, a dissertation for the degree of Doctor of Philosophy, on "The Order of Words in Old Norse Prose," delivered an address in German, on November 19th, before the teachers of language in the public schools of the city, on "Germanische Sprachen und Litteraturen in der Columbia Universität." The address was also made the subject of an article with the same title in the *Staats-Zeitung* of November 29th.

At the last meeting of the Modern Language Association of America, held at Cleveland during the Christmas holidays, Colum-

bia was represented by Professor Calvin Thomas, the President of the Association, and also by Mr. E. H. Babbitt and Dr. B. D. Woodward. The presidential address of Professor Thomas, entitled "Literature and Personality," was devoted to general considerations upon the scientific study of literature. By way of introduction the paper drew attention to the perils that beset an exclusively historical interpretation, and endeavored to define the scope and value, from the scientific point of view, of purely æsthetic criticism. The main body of the address was devoted to the question whether the scientific spirit should lead us to make much, or to make little, of personality in the study of literature. The speaker was for making much of it.

At the second session Dr. Woodward read a paper upon "Recent Work of the Rumanian Academy," giving the results of studies undertaken during his recent sojourn in Rumania. The paper was listened to with great interest and drew out many questions.

Mr. Babbitt presented his report as Secretary of the American Dialect Society, which is organized as a section of the Modern Language Association. The report showed encouraging progress in the work of the Society and Mr. Babbitt was continued in his office of Secretary, which carries with it the responsible editorship of *Dialect Notes*.

On Thursday, January 28th, Professor Thomas, responding to an invitation from the German teachers of New York, gave an informal lecture at the City College upon "Weimar and its Classical Reminiscences." The lecture dealt with the rise of Weimar as a literary centre, with life there in the great days, and with the various efforts that are now making to perpetuate the noble memories of the past and make them fruitful for the German nation.

The Indo-Iranian Department of the Library will receive an addition of a number of Sanskrit books, purchased from funds given by Mr. G. K. Sheridan, of New York City.

Professor A. V. Williams Jackson was one of those who, by invitation, addressed the Church Congress on "Archæology and the Bible," at their annual meeting last November, in Norfolk, Va.

Dr. Wm. R. Arnold (Ph.D., Columbia, '96), has been appointed curator at the Metropolitan Museum of Art, in place of the late Professor Isaac H. Hall.

Two more lots of Hebrew manuscripts have been added to the Oriental collection of the Library. They number forty-seven volumes. The larger part is the gift of Mr. J. N. Hazard, the others

the gift of Mr. Benjamin Stern and Mr. Charles A. Dana. Professor Gottheil is at work on a card catalogue of all the Oriental manuscripts in this country.

The *Revue Sémitique* (Paris) for October, 1896, contains a very flattering review of Dr. J. Frederic Berg's dissertation, *The Influence of the Septuagint on the Peshitta Psalter*.

FACULTY OF POLITICAL SCIENCE

The *Series in History, Economics, and Public Law* has in press four new monographs, which will complete volume VIII, and begin volume IX.

Professor Sloane, who is now in Europe supervising the publication of his *Napoleon Bonaparte* in French and German, will take up his regular work in the Department of History next October. Professor Sloane will give three courses of lectures: Transition Epochs in American History, France under Napoleon, and Causes and Effects of the War of 1812. One of these courses will be open to Seniors.

Among the recent doctor's dissertations is one by Mr. Ernst Freund, now Assistant Professor of Jurisprudence at Chicago, on *The Legal Nature of Corporations*.

Dr. H. C. Emery, whose dissertation on *Speculation on the Stock and Produce Exchanges of the United States* has attracted considerable attention, and who is occupying the chair of Economics in Bowdoin College, is now on a year's leave of absence pursuing his studies in Berlin.

The students of the Statistical Seminar under Professor Mayo-Smith are engaged this year in analyzing and tabulating 500 family records of cases that have been under the care of the Charity Organization Society since 1890. The object is to discover the alleged cause of distress, the real cause, the actual treatment, and the treatment which was most needed.

The Macmillan Company has in press a *Syllabus of Sociological Principles for the use of College and University Classes*, by Professor Giddings. This is more a work of pure theory than *The Principles of Sociology*. The latter has just appeared in a French translation by Vicomte Combes de Lestrade.

Professor Goodnow's book on *Municipal Problems*, which has been accepted by the Columbia University Press, will shortly appear. In this book the author treats of the most important problems of city government, which are considered from the point of

view that the city is simply a part of the general scheme of state government.

Messrs. Scribner's Sons have just published in the American History series a new volume by Professor Burgess entitled *The Middle Period*, extending from 1820 to 1860. A second volume, which is in preparation, will bring the history down to 1876.

The Academy of Political Science, formerly composed wholly of officers and students of the University, has been reorganized as The Academy of Political Science in the City of New York, and has taken into its membership a large number of distinguished gentlemen who have made important contributions to the political sciences, or have aided in the application of scientific principles to the social and political questions of the day. The membership is composed of Fellows, who hold the governing power, associates, and student members. At the January meeting President Low was elected President of the Academy; Hon. Abram S. Hewitt, First Vice-President; Hon. Carl Schurz, Second Vice-President; Professor William M. Sloan, Secretary; Professor Franklin H. Giddings, Acting Secretary, in the absence of Professor Sloan; and Mr. George A. Plimpton, Treasurer. At the February meeting of the Academy Mr. Lawrence Godkin read a paper by Mr. E. L. Godkin on "The Nominating System."

FACULTY OF PURE SCIENCE

The following preamble and resolutions expressing the hearty appreciation of Professor Britton's services to the School of Pure Science were unanimously adopted by the Faculty of that School at its meeting of November 20, 1896:

On September 7, 1892 President Low issued a call for a meeting to be held on the 30th day of the same month for the purpose of organizing the Faculty of Pure Science. At this first meeting, Professor Nathaniel L. Britton, E.M., Ph.D., was elected Secretary of the Faculty, and from this time until his resignation from the University in June, 1896, he continued to perform the duties of that office.

The period which immediately followed the organization of this Faculty was a period of rapid growth. Starting with a representation of the departments of Astronomy, Botany, and Zoölogy only, others were speedily added, until now the Faculty comprises twelve different departments with a corps of more than fifty instructors; while the number of courses of instruction offered has increased from something less than twenty to more than one hundred and fifty.

A period of such rapid development was necessarily a period of much adjustment and readjustment. A working scheme of correlation and equiva-

lence of major and minor courses of study had to be wrought out; rules and regulations had to be formulated and interpreted; the varying qualifications and desires of students had to be considered and determined, often without the aid of either rule or precedent; while the rising school had also to discover, in great measure, its proper relations to the other undergraduate and graduate schools of the University.

During all this period a large share of constructive and administrative work fell naturally to Professor Britton as Secretary. To him students and professors alike applied for information as to what could or could not be done, and although quartered in a somewhat obscure locality, and busily engaged with the researches of his own department, he was at all times one of the most accessible officials on the University grounds. With a clear knowledge of the functions of science in a University, with rare capacity for the execution of administrative details, and with a just appreciation of the spirit as well as letter of the law, he contributed in a signal manner to the harmonious and effective development of the work of this Faculty. He joined the Faculty at its inception, when it gave only the promise of a successful experiment; now, after four years of indefatigable labor in the promotion of its interests, he leaves it a fully matured organization.

In view of these invaluable services rendered to the School of Pure Science, be it resolved:

That the Faculty of Pure Science hereby expresses its cordial appreciation of Professor Britton's untiring devotion to the establishment and progress of our School; that we recognize also with profound regard those personal qualities, which, united with a cheerful and enthusiastic energy, have proved a source of encouragement to us all; and that we heartily rejoice in the maintenance of his official connection with the University through his emeritus professorship.

Be it further resolved:

That a duly certified copy of this minute be transmitted to Professor Britton together with the good wishes of this Faculty for success in the varied activities of his new position as Director-in-chief of the New York Botanical Garden.

The fund contributed by Rutherford Stuyvesant, Esq., has enabled Professor Rees to secure the services of Katharine U. Peirce, A.B. (Vassar, '89), as computer and observer with the Repsold Machine. Plates taken by Rutherford and not measured by him will now be measured and reduced.

The Smithsonian Institution has reprinted in its report (Pp. 271-279) the lecture by Professor J. K. Rees before the New York Academy of Sciences on "Variation of Latitude." The paper has been printed by the Smithsonian Institution as a separate pamphlet, No. 1005.

In a letter just received by Professor Rees, M. Em. Fergola states that the calculations at the Royal Observatory of Naples on the observations for variation of latitude for the period April 18,

1893, to July 18, 1894, are very nearly completed. The computations for the same period are almost finished at the Columbia Observatory. It seems likely that the results at the two observatories will be ready for the press at the same time.

Anticipating the removal to the new site and enlarged quarters, the Department of Botany is preparing to offer next year a more varied as well as a more extended course of instruction than has hitherto been possible on account of the utterly inadequate laboratory accommodations which have been available. In addition to the rearrangement of the present preliminary courses, two new undergraduate courses in plant physiology have been added, together with one course involving special methods of advanced microbotanical technique in connection with the study of special morphological problems involving these methods.

The entire course requires three years of consecutive work in botany as a preparation for a graduate major, the work normally commencing in the Sophomore year; it is arranged, however, so that students can accomplish it in two years by taking double work in the subject during the Senior year. Besides the general introductory course, which involves more or less general biology, courses are arranged in the general morphology of the lower plants, the anatomy (histology) of the higher plants, and the elements of plant physiology. So far the course is a fixed requirement for those who expect to pursue graduate majors or minors in the subject of botany. The selection of courses in the third year is made somewhat flexible, so that the student who wishes to carry on his graduate work in a special line, as for example, plant physiology, can select in his Senior year such work as will bear more directly on his graduate study.

The graduate courses have also been modified so as to permit a somewhat wider range of subjects, particularly in plant physiology and cryptogamic botany.

Dr. Carlton C. Curtis is working on some interesting problems in plant physiology at the conservatory on the new site. His work on *Elementary Botany* has gone to press and will be issued early this year.

Dr. Small is continuing his studies on the flora of the Southeastern States as rapidly as his duties as curator will permit. He has recently revised the genera *Bumelia* and *Tradescantia*, and the publication in each will reveal some interesting discoveries. His recent discovery and publication of a new *Prunus* from Connecticut

illustrates the fact that even in the well-worked regions of New England there is still field work to be done on the shrubs and trees. He is also preparing the revision of the Polygonaceæ for the new *Systematic Botany of North America*. The genus *Eriogonum* alone includes over 200 species.

Mr. Rydberg, Fellow in Botany, has nearly completed his monograph of *Potentilla* and allied genera, his thesis covering a wider field than originally intended. It will be printed in quarto form and the plates, which are nearly completed, will illustrate all the North American species of the tribe.

Mr. M. A. Howe has selected for his special work the Bryophyta of California. Mr. Howe was for four years instructor in botany in the University of California, and spent parts of five seasons in exploring the cryptogamic flora of the state. His preliminary studies of a long series of preparations, particularly of the Marchantiales, have already corrected some of the current positions regarding the relations of the members of this group. Some excellent results are sure to follow as a result of his studies.

Mr. E. O. Wootton will devote a large part of his time to the elaboration of the higher flora of New Mexico. His long experience as Professor of Botany at the Agricultural College of New Mexico and his field explorations in the less known portions of the Territory, have thoroughly prepared him for a judicious review of its flora. He is hoping to spend the summer vacation in further exploration, and thus increase his already large collection of material from this interesting region.

Mr. A. J. Grout has the American members of the genus *Bryothecium* and its allies well in hand, and is now gathering up the last of the outliers preparatory to casting them into a monograph, which will constitute his thesis. This group of mosses is one that is specially difficult, and his elucidation will be one that will be appreciated by all students of American mosses.

Mr. A. A. Tyler has completed his thesis on the nature and origin of stipules, and it is ready for the press. His work in the course is completed, and, for the present, he will assist Dr. Britton in caring for the rapidly accumulating collections that are being received for the New York Botanical Garden.

Dr. Albert Schneider's *Text-book of Lichenology* is in press. It will be illustrated with about eighty large octavo plates.

The Herbarium is acquiring a considerable collection of *Exsiccata cryptogamæ*. Besides several general collections, special

series of the algæ are being received, so that the material already accessible for study is very considerable. Besides all the American series, sets of Areschoug and Rabenhorst are already available, and others are expected from Europe in a short time. The general additions to the Herbarium are summarized below by Dr. Small.

Many additions have recently been made to the botanical collections. Among the valuable additions to the herbarium may be noted: 125 mosses from Mexico and the Pacific slope, collected by Mr. C. G. Pringle; 100 Mexican mosses from Mr. J. G. Smith; 450 Colorado mosses from Mr. T. S. Brandegee and Mrs. C. B. Clarke, and 50 mosses, collected in Georgia, from Mr. Joseph Bridgham. The fern collection has been augmented by collections from various parts of North America, Cuba, and other foreign countries, and a set representing the remarkable fern flora of Alabama, collected by Professor Underwood. The chief additions in flowering plants are: several hundred miscellaneous specimens from the United States, presented by Dr. B. L. Robinson, Dr. Charles Mohr, Rev. C. H. Demetrio, Professor S. M. Tracy, Mr. C. L. Pollard, and others; 200 plants from British America, including a fine representation of the genus *Potentilla*, through Professor Macoun, of the Geological and Natural History Survey of Canada; 250 rarer plants from the mountains of North Carolina, sent by Mr. A. M. Huger; 350 specimens from Georgia and Colorado, presented by Mrs. C. B. Clarke; 210 numbers of Mr. Pringle's *Plantæ Mexicanæ* for 1895; a collection of Californian Saxifragaceæ from the California Academy of Sciences; 850 numbers of Mr. Nash's Florida Plants for 1895; 700 specimens from the little known regions of Wyoming; a set of 100 Mexican medicinal plants, prepared by Dr. P. Valdez, presented by Professor Rusby; 500 specimens, representing the flora of Alabama and Mississippi, and a set of Indiana oaks, collected and presented by Professor Underwood; 100 west American Polygonaceous and Saxifragaceous plants, from Professor C. V. Piper; 200 specimens from several peaks of the Blue Ridge, in North Carolina, South Carolina, and Georgia, from Dr. Small; a miscellaneous collection of 150 grasses, from Mr. George V. Nash, and 50 species of Rocky Mountain plants, collected by Professor Kemp.

A large collection of tropical ferns, New Zealand mosses, and Falkland Island phanerogams, were received from the Director of the Royal Botanical Gardens at Kew.

Mr. Maclay, who is absent on leave, is spending the present

academic year in study at the University of Berlin. In his absence Dr. Chittenden has charge of the mathematical work of the first-year class under the Faculty of Applied Science.

At the annual meeting of the American Mathematical Society held December 30, 1896, Professor Cole was reelected Secretary of the Society, and Professor Fiske was reelected editor of its mathematical journal.

Professor Rood read a paper before the National Academy of Sciences at its fall meeting in this city, on November 16th. The paper treated of Six Forms of Flicker Photometer, and described the method and apparatus devised by him, as well as some of the results of his experiments with this form of instrument.

During the month of February Professor William Hallock was able to resume his investigations concerning the temperature of the interior of the earth, which were begun several years ago when he was a member of the United States Geological Survey. The deep well at West Elizabeth, near Pittsburgh, Pa., furnished a field for the last series of observations, and Professor Hallock obtained some valuable data, which, coupled with the previous observations made by him at the deep well at Wheeling, West Virginia, will furnish material for use in critical study of certain problems connected with the crust of the earth. He has also continued his researches in the Acoustics of Voice Production and Analysis, and has delivered a number of lectures before various scientific and musical societies explaining the present condition of this subject and the discoveries of recent investigators.

The record of publications of the Department of Zoology for 1896 is as follows:

- OSBORN, Prof. H. F. A student's reminiscences of Huxley. Biological lectures, Mar. Biol. Lab., Woods Holl, 1895, pp. 29-46.—The world's debt to biology. *The Chautauquan*, July.—A mode of evolution requiring neither natural selection nor the inheritance of acquired characters. *Trans. N. Y. Academy of Science*, March and April.—The cranial evolution of Titanotherium. *Bulletin American Museum of Natural History*, pp. 157-197, July 31.—The corner-stones of learning. an address delivered on the laying of the corner-stone of Schermerhorn Hall, Columbia University dedication volume.—Ontogenic and phylogenic variation. *Science*, November 27; vol. 4, pp. 786-790.—Lamdelotherium not related to Palaeosyops or the Titanotheres. *American Naturalist*, vol. 31, pp. 55-57.—Prehistoric quadrupeds of the Rockies. *Century Magazine*, September, pp. 705-712.—Biological teaching in high schools. Discussion before the State convocation at Albany, July. Pp. 3.
- WILSON, Prof. E. B. On cleavage and mosaic-work. *Archiv für Entwicklungsmechanik*, vol. 3, no. 1.—The cell in development and inheritance. Macmillan. 8vo, pp. 371, figs. 142.

- DEAN, Prof. Bashford. The early development of *Amia*. *Quarterly Journal of Microscopical Science*, vol. 38, pp. 413-434, pls. 3.—On the early development of ganoids. *Compte-rendu des Séances du troisième Congrès International de Zoologie*. Leyden, pp. 336-346.—Notes on ancestral sharks. *N. Y. Acad. Sci.*, November 11. Abstract in *Anatomischer Anzeiger*, vol. 11, no. 13.—On the marine aquariums of Europe. *Popular Science Monthly*, vol. 50, no. 1, pp. 13-28.—Is *Palæospondylus* a Cyclostome? *Transactions N. Y. Academy of Science*, vol. 15, pp. 101-104.—Sharks as ancestral fishes. *Natural Science*, vol. 8, pp. 245-253.—The fin-fold origin of the paired limbs in the light of the ptychopterygia of palæozoic sharks. *Anatomischer Anzeiger*, vol. 11, pp. 673-679.—Instinct in *Amia* (Abstract). *Anatomischer Anzeiger*, vol. 11, 696.—The larval development of *Amia calva*. *Zoölogisches Jahrbuch*, B. 9, s. 637-72, t. 3.—Arthur Smith Woodward's catalogue of fossil fishes of the British Museum, vol. 3 (Review). *Science*, vol. 4, no. 72.—The Cyprinodonts, by S. Garman (Review). *Ibid.*—On the vertebral column, fins, and ventral armoring of Dinichthys. *Transactions N. Y. Academy of Sciences*, vol. 15, pp. 157-165.
- CALKINS, Gary N. Seutemann's Kindersterblichkeit sozialer bevölkerungsgruppen insbesondere im preussischen staate und seiner provinzen (Review). *Publications of American Statistical Association*, vol. 5, 148-154.—Hoffman's Race traits and tendencies of the American negro (Review). *Political Science Quarterly*, vol. 9.
- STRONG, O. S. Atlas of nerve cells. By M. Allen Starr, with the coöperation of O. S. Strong and Edward Leaming. Columbia University Press. 4to., pp. 78, with 53 plates and 13 diagrams.—Review of the Golgi method, part 1. *Journ. of Comparative Neurology*, June; vol. 6, no. 2, pp. 101-127.
- HARRINGTON, N. R. Secretory changes in the lime-cell of the earthworm. *Bull. N. Y. Acad. Sci.*—Notes on the crustacea, annelids, and echinoderms of Puget Sound. *Ibid.*
- CRAMPTON, H. E. Experimental studies on gasteropod development. *Archiv für Entwickelungsmechanik der Organismen*, Band 3, Heft 1, pp. 19.—Observations upon fertilization in gasteropods. *Amer. Morphological Society*, December 29.
- MCGREGOR, J. H. Preliminary note on the cranial nerves of *Cryptobranchus alleghaniensis*. *Journ. Comp. Neurology*, March; vol. 6, p. 1.

SUMMARIES OF UNIVERSITY LEGISLATION

UNIVERSITY COUNCIL. DECEMBER MEETING

The Council recommended to the President, for the degree of Doctor of Philosophy, Henry Crosby Emery, of Ellsworth, Maine, A.B., Bowdoin College, 1892; M.A., Harvard University, 1893. Major subject: Political Economy and Finance; minor subjects: Sociology and Statistics; Roman Law and Comparative Jurisprudence; dissertation: Speculation in Stock and Produce Exchanges in the United States.

The Council recommended to the President, for the degree of

Doctor of Philosophy, Harry Alonzo Cushing, of New York City, A.B., Amherst College, 1891; A.M., Columbia University, 1894. Major subject: American History; minor subjects: European History, Political Economy, and Finance; dissertation: The History of the Transition from Provincial to Commonwealth Government in Massachusetts.

UNIVERSITY COUNCIL. JANUARY MEETING

The Council recommended to the President, for the degree of Master of Arts, Louisa Sewall Cheever, of Worcester, Mass., A.B., Smith College, 1890. Major subject: Latin; minor subjects: Greek and German; dissertation: Parachesis in Cicero.

THE TRUSTEES. JANUARY MEETING

At the meeting of the Trustees held January 4th, Mr. Wm. Barclay Parsons, A.B., '79, C.E., '82, was elected to succeed Mr. Harper; and Mr. Frederic Bronson, A.B., '71, LL.B., '73, was elected to succeed Mr. Lathrop. Mr. W. C. Schermerhorn was reelected Chairman, and Mr. Pine, Clerk of the Trustees, for the ensuing year. Mr. John McLean Nash was reelected Treasurer for the ensuing three years.

The following named gentlemen were elected to serve on committees: Mr. Rives, on Finance; Mr. F. A. Schermerhorn and Mr. Parsons, on Buildings and Grounds; Mr. Nash and Mr. Beekman, on Honors; Mr. Nash, Dr. Wheelock, and Mr. Parsons, on Education; and Bishop Potter and Mr. Coudert on the Library. The Special Committee in charge of the development of the new site was enlarged so as to include the Clerk of the Trustees, as well as the Chairman.

A vote of thanks was tendered to the Duc de Loubat for a gift of a reproduction of a valuable Mexican manuscript; also to Mr. S. K. Sheridan for a gift of money for the purchase of books in Sanskrit; also to Mr. Benjamin Stern and Mr. Charles A. Dana, and to Mr. J. N. Hazard for gifts of Hebrew manuscripts; also to Dr. William H. Draper for a gift of medical works; also to Mr. Samuel D. Babcock for a gift of \$500 to the Library Fund, to be expended under the direction of the Department of History. A vote of thanks was also tendered to J. Ackerman Coles, A.B., '64, M.D. '68, for a gift of several bronze busts, handsomely mounted, consisting of copies of the Olympian Zeus, by Phidias; of the bust of Plato, found in the House of the Papyri, Herculaneum, and of the Hermes of Praxiteles, found in the Temple of Hera in Olympia.

The Clerk reported that the agreement between the Trustees and Barnard College, providing for the Brooklyn and Curtis Scholarships, which was approved at the last meeting, had been executed by both corporations.

The Special Committee on Buildings and Grounds presented a report recommending the erection of the Gymnasium and the completion of the South Court, and the recommendations were adopted and appropriations were made to commence the work forthwith.

The resignation of Professor Charles F. Chandler as Professor of Chemistry and Medical Jurisprudence in the College of Physicians and Surgeons, which was presented at the November meeting, was accepted, to take effect June 30, 1897, and it was *Resolved*, That in accepting the resignation the Trustees express their thanks to Professor Chandler for the great contribution he has made to the success of the College of Physicians and Surgeons as the Medical School of Columbia University.

The resignation of Dr. Thomas Egleston as Professor of Mineralogy and Metallurgy was accepted to take effect June 30, 1897, and it was *Resolved*, That in recognition of his long service as the incumbent of this chair, and of his valuable and important service as the founder of the School of Mines, Professor Egleston be retired as Emeritus Professor of Mineralogy and Metallurgy, upon half pay, from and after June 30, 1897.

A number of amendments to the Statutes were adopted, and the Clerk was authorized to issue a new edition. *Resolved*, That in view of the amendment to Chapter VIII, Section I, of the Statutes this day adopted, the following professors be assigned to the Faculty of the College, so that the amendment shall not operate to remove from the Faculty any one now a member of it, viz., Professors Burgess, Seligman, Gottheil, Dunning, Hallock, Todd, Fiske, Egbert, Thomas, Jackson, Wilson, Wheeler, Hyslop, and Speranza.

The Faculty of Pure Science was authorized to appoint Mr. Heinrich Ries Assistant in Mineralogy during the current academic year.

The President and Treasurer presented their annual report on free and reduced tuition, showing 81 students receiving free tuition, 6 receiving tuition at reduced fees, 120 holding scholarships, and 27 holding fellowships.

THE TRUSTEES. MARCH MEETING

The Committee on Buildings and Grounds reported that they had awarded to Norcross Brothers the contracts for completing the

south court and for constructing the Gymnasium. Upon the recommendation of the Committee an appropriation was made to meet the expenses of removal. The building now known as "South Hall" will be occupied by the Dean of the College, and the Departments of Mathematics, Greek, and Latin, and the building will hereafter be designated as "College Hall."

The Committee on Education reported that it had agreed with the Directors of the New York Botanical Garden to have the Torrey Herbarium placed in the Museum of the Garden, the specimens belonging to the University being kept distinct from those belonging to the Garden. The Committee also reported that in view of the retirement of Professor Egleston, it had arranged with Mr. H. M. Howe, A.M., S.B., of Boston, and with Mr. Walter B. Devereux, A.B., E.M., '78, for a course of lectures upon the metallurgy of the precious metals, to be given during the current year.

The Special Committee which was appointed to confer with representatives of the Cathedral of St. John the Divine, St. Luke's Hospital, and Teachers College reported that the name "Morningside Heights" had been agreed upon as the designation of the plateau between Riverside and Morningside Parks. The Committee on the General Catalogue reported that it had completed a list of students who had matriculated in the College, but who had not graduated, between the years 1789 and 1897; also a list of all recipients of scholarships, prizes, and fellowships, and that the names had been arranged in suitable volumes. The Committee also reported that it had collated the military records of about 400 students and graduates who had served in the War of the Rebellion. An appropriation was made to enable the Committee to continue its work.

The following professors were reappointed: Franklin H. Giddings, A.M., Professor of Sociology; George F. Canfield, A.B., LL.B., Professor of Law; Thomas Scott Fiske, Ph.D., Adjunct Professor of Mathematics, and Harold Jacoby, Ph.D., Adjunct Professor of Astronomy. Bashford Dean, Ph.D., Adjunct Professor of Zoölogy, was assigned to a seat in the Faculty of Pure Science. The following appointments made by the Faculty of the College were confirmed: Charles Knapp, Ph.D., as Assistant in Latin, and S. A. Joffe, M.S., Assistant in Mathematics, to succeed Francis A. Provot, C.E., resigned.

The Trustees adjourned to meet on April 5.

UNIVERSITY PUBLICATIONS

For purposes of record and information there is published in each number of the BULLETIN a complete list of the recent issues of the various serial Studies and Contributions issued from the University.

STUDIES IN HISTORY, ECONOMICS, AND PUBLIC LAW

(Edited by the Faculty of Political Science)

VOLUME VII (pp. 512)

1. History of the Transition from Provincial to Commonwealth Government in Massachusetts. By Harry A. Cushing, Ph.D. Price, \$2.00.

2. Speculation on the Stock and Produce Exchanges of the United States. By Henry Crosby Emery, Ph.D. Price, \$1.50.

For further particulars apply to Professor Edwin R. A. Seligman, Columbia University, or to The Macmillan Co., New York City.

CONTRIBUTIONS FROM THE HERBARIUM OF COLUMBIA UNIVERSITY

CONTINUATION OF VOLUME V

No. 105. Notes on *Potentilla*,—V. By P. A. Rydberg (1896).

No. 106. Reinke's Discussions of Lichenology. By Albert Schneider (1896).

No. 107. Two Nuttalian Species of *Oxalis*. By John K. Small (1896).

No. 108. The North American Species of *Agrimonia*; *Geum Canadense flavum* (Porter) Britton, a valid species. By Eugene P. Bicknell (1896).

No. 109. Terminology among the Orders of *Thallophytes*. By Lucien Marcus Underwood (1896).

No. 110. Notes on *Potentilla*,—VI. By P. A. Rydberg (1897).

No. 111. New or Noteworthy American Grasses,—V. By Geo. V. Nash (1897).

No. 112. An Apparently Undescribed Species of *Prunus* from Connecticut. A new *Polygonum* from Bolivia. The Relation Between the Genera *Thysanella* and *Polygonella* as shown by a hitherto unobserved character. By John K. Small (1897).

For copies address Professor L. M. Underwood, Columbia University.

CONTRIBUTIONS TO PHILOSOPHY, PSYCHOLOGY, AND EDUCATION

The Columbia University Contributions to Philosophy, Psychology, and Education are issued under the editorship of the officers of the Department, and appear at irregular intervals. They are published for the Department by The Macmillan Co., 66 Fifth Avenue, New York, to whom inquiries and orders should be directed.

5. Hegel's Doctrine of the Will. By John Angus MacVannel, Sometime University Fellow in Philosophy in Columbia College. April, 1897. \$1.00.

RECORD OF PUBLICATIONS (1896) BY OFFICERS
OF THE UNIVERSITY

The following is a list of the publications by officers of the University that have appeared during the year 1896.

BABBITT, E. H. (Editor) *Dialect Notes*, part ix.—The English of the lower classes in New York and vicinity. *Ibid.*

BAILEY, Dr. Pearce. Report of two cases of tumor of the spinal cord, unaccompanied by severe pain. *Journ. Nerv. and Ment. Dis.*, March.—Results of thyroid treatment of sporadic cretinism (with Dr. F. Peterson). *Pediatrics*, May.—The history and application of the thyroid treatment. *The Trained Nurse*, July.—A contribution to the pathology of acute ascending (Landry's) paralysis (with Dr. J. Ewing). *New York Med. Journ.*, July 4 and 11.—The diagnosis of ideopathic epilepsy. *Amer. Med. Surg. Bulletin*, August 8.—A case of acute cerebrosyphilis (with Dr. G. E. Brewer). *Journal of Cutaneous and Genito-Urinary Diseases*, October.—The influence of optic atrophy upon the course of locomotor ataxia. *N. Y. Med. Rec.*, December 28.

BEER, G. L. Rafael Altamira's *La Enseñanza de la historia* (Review). *Political Science Quarterly*, December; vol. 2, pp. 738-741.—Richard Ehrenberg's *Hamburg und England im Zeitalter der Königin Elisabeth* (Review). *Ibid.*, vol. 2, pp. 761-763.

BOAS, Franz. Die Verbreitung der Indianer-Sprachen in British Columbien. *Petermann's Mitteilungen*, no. 1, and map.—The growth of Indian mythologies. *Journal of American Folk-Lore*, vol. 9, pp. 1-12.—The child and childhood in folk-thought. *Science*, May 15; vol. 3, pp. 741-742.—Livi's Antropometria militare. *Science*, June 26; vol. 3, p. 929.—The form of the head as influenced by growth. *Science*, July 10; vol. 4, p. 50.—The decorative art of the Indians of the North Pacific Coast. *Science*, July 24; vol. 4, pp. 101-103.—Die Entwicklung der Geheimbünde der Kwakiutl Indianer. In *Bastian Festschrift*, Berlin, pp. 435-444.—Songs of the Kwakiutl Indians. *Internationales Archiv für Ethnographie*, Supplement, p. 1-9.—The Indians of British Columbia. *Bulletin American Geographical Society*, vol. 28, pp. 229-243.—Eleventh report of the committee on the northwestern tribes of Canada. British Association for the Advancement of Science. Liverpool meeting. Pp. 1-23.—The limitations of the comparative method in anthropology. *Science*, December 18; vol. 4, pp. 901-908.

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- BREVER, Dr. G. E. Operative surgery at the City Hospital; with a preliminary report on the study of wound infection. *N. Y. Medical Journal*, May 2.—Clinical and pathological report of a case of cerebral syphilis (with Dr. P. Bailey). *Journ. of Cutaneous and Genito-Urinary Diseases*, October.
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- CARPENTER, Prof. G. R. (Editor) Longmans' English classics. Longmans, Green & Co. Vols. 9-23.—(Editor) UNIVERSITY BULLETIN, nos. 13-15.—Introduction to Brewster's Studies in structure and style. Macmillan. Pp. ix.-xiii.—Selections from the works of Sir Richard Steele. Ginn & Co. 8vo. Pp. 1xix, 203.
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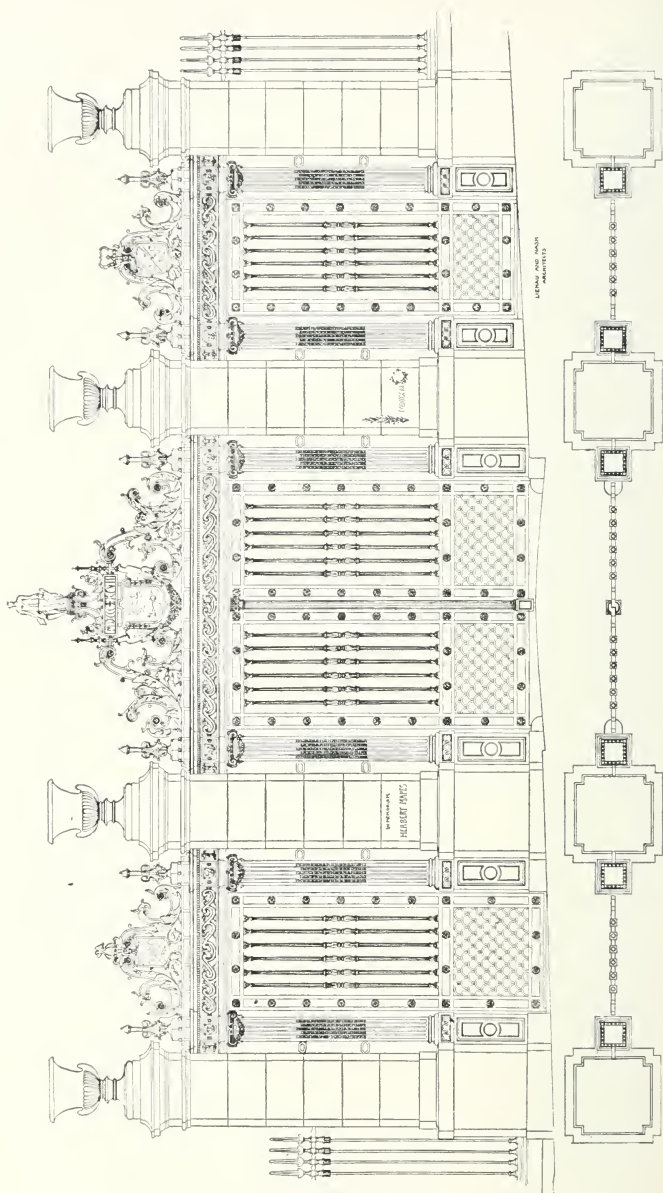
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DESIGN OF THE MAPES MEMORIAL GATE TO BE PLACED AT THE BOULEVARD ENTRANCE TO THE NEW SITE.

COLUMBIA

UNIVERSITY BULLETIN

JUNE, 1897

XVII

COLUMBIA AT FORTY-NINTH STREET

In 1853, the Trustees of Columbia College determined that it was necessary to abandon the historic site which had been occupied by King's College and by Columbia College for a hundred years. It is easy to imagine how severe the wrench must have been when the abandonment of a spot so rich in historic associations had been determined upon. But the business of the city had begun to make inroads upon the site by cutting streets through it, and the patrons of the College were moving constantly farther and farther away. Accordingly the great decision was made, and the College entered upon a new stage in its development by removing in 1857 to the site on Forty-ninth Street, which itself is so soon to be abandoned for what we fondly hope may prove to be the permanent home of the University. It is noteworthy that the Trustees even of that day believed that Columbia's destiny was to be that of a university rather than of a college pure and simple. The removal to the Forty-ninth Street site was marked by an effort to develop advanced instruction in literature, in history, and in public law, and by the establishment of the Law School. Professor Nairne, Professor Francis Lieber, and Professor Dwight were all appointed as incidents of this effort. In some respects the effort was ahead of

the times ; but it is significant, among other reasons, as showing that the removal of Columbia to the present site was as distinctly a part of a progressive movement in the history of the University as the removal now in contemplation.

It is also significant that Forty-ninth Street has always been looked upon as only a temporary location. After removal here, resolution after resolution to consider the choice of a permanent site was passed by the Trustees ; but, for one reason or another, these various inquiries gave no result. The difficulty of finding a suitable location elsewhere, which should be both large enough in extent and sufficiently accessible, proved always fatal to any actual proposition. The Trustees did indeed buy, in 1872, a tract of land about ten acres in extent, which they still hold, lying to the west of Eleventh Avenue, just north of One Hundred and Sixty-second Street. If it had been possible to conceive of Columbia as a college only, it is probable that the College might have been removed to this site many years ago ; but the Trustees shrank, either consciously or unconsciously, from placing the College in a position where it would lose all the advantages incident to its location in the city of New York, without gaining the advantages for purely college life that a rural or suburban site affords. Ten years later, in the early eighties, it became apparent that the College must either move or enlarge its accommodations at Forty-ninth Street. Again an effort was made, without success, to solve in a permanent way the problem of the ultimate location of Columbia. In the meanwhile, the pressure for enlarged accommodation was constant and had to be met. Accordingly, at this epoch, Hamilton Hall and the Library Building were erected ; the School of Mines Building was also enlarged and, to some extent, rebuilt. The temporary nature of this solution of the problem became apparent within a decade, and at last circumstances favored a permanent solution. For the first time a new site was suggested by Mr. John B. Pine, in 1892, which commended itself so entirely both to the public opinion of the city and to the Trustees as to make the decision for its purchase an easy one.

The history of the new site is to be made ; the record of our work here is almost completed.

I judge that the Forty-ninth Street site, when first occupied, was further from the residential part of the city, the means of access being considered, than our new site will be when we move to it. Nevertheless, the College opened its doors at Forty-ninth Street with a larger number of students than in any previous year. The first class that entered Columbia after its removal to these grounds had not been graduated before the Civil War broke out. More than one hundred of our students and graduates served in the army at one time or another during the war. Even during the Civil War, however, the forces of growth inherent in the country and in the city could not be restrained, and the School of Mines came into being while the country was still engaged in a struggle for its existence. Incidents like this reveal the tremendous vitality of the United States in a most striking way. Though the country was battling for its existence, its higher life was developing on every hand. In 1864 Dr. Barnard became President of the College, and served it upon this site for twenty-five years. The School of Mines was founded in direct response to the efforts of Dr. Thomas Eggleston ; but it was greatly expanded by the friendly and efficient interest taken in it at all times by President Barnard. Dr. Barnard had not been President for three years before he wrote in his annual report that Columbia must have a larger site. His words were prophetic. He said that no power could prevent the expansion of the College, and that it would be absolutely impossible to confine it within the narrow limits of the block that it now occupies. In this faith he labored year after year, and it is hardly too much to say that the expanding life that has manifested itself in Columbia during the last few years was consciously prepared for by President Barnard during all his long administration. On every occasion he dwelt upon the possibilities and obligations of Columbia in a way to show that his confidence in its future was both well founded and enthusiastic. He did much to educate both the

Trustees and the public to a realization of what might reasonably be anticipated. Especially he insisted upon the necessity of a great increase of resources, if Columbia was to be to New York what New York had a right to expect that it should be. He emphasized the importance of this by giving to the College, at his death, his entire estate, subject to a life interest on the part of his widow. Mrs. Barnard, in her will, left her own estate also to the College; and thus in death they were united, as in life, in the service of the University where they had spent together so many happy years. When we move to our new home, no one should forget that, in a very real sense, we are only walking in the path that was blazed out for us by the earnest, enthusiastic, devoted servant of Columbia whose administration was spent entirely under the temporary conditions incident to the Forty-ninth Street block—President Barnard.

It has been reserved for this site, also, to witness the organization of the institution as Columbia University, into which estate it had been growing ever since its foundation, sometimes consciously and sometimes unconsciously. But here, at Forty-ninth Street, the formal change was effected.

The student life of Columbia has undergone a considerable change during the forty years of its occupancy of the present site. The writer entered the College as a student thirty years ago. At that time, as he remembers, Madison Avenue was not paved above Forty-second Street. The cattle pens of the Bull's Head Market were still maintained in the low-lying blocks to the eastward of Fifth Avenue, just below the present site of the Windsor Hotel. The large blocks to the westward of Fifth Avenue, in the neighborhood of Forty-ninth Street, were all vacant. The College block itself was much more open than now, as may be seen by examining a picture of it. The space now occupied by Hamilton Hall was largely unimproved, although one or two small buildings did stand in that part of the ground. The space occupied at present by the Library Building was vacant and was the football ground of the students of that day. The space that is

now vacant on Fiftieth street was then occupied by the only building used for college purposes, except that a small building was erected about that time for the use of the School of Mines. Lectures in the College began at 10 o'clock and ended at 1 o'clock. The student of that day, therefore, had more command of his time and much more space for freedom of movement than he enjoys to-day.

Here, also, the city has gradually built the College in, until all this is a thing of the past. On the other hand, the developing educational tender of the College and the growth of the elective system have stretched the hours of instruction from 9:30 in the morning to 5:30 in the afternoon. This has resulted, of course, in a greatly improved educational tender; but it has also resulted in depriving the college student, to a great extent, of the command of his time, and it has made it essential that there should be, at the College, accommodation for the student outside of the class-room as well as in it. Where we now are it has been impossible to comply with this condition. It is no small part of our ground for pleasure in the prospect of removal to the new site, that there we shall have elbow room and shall enjoy the individuality that has been so much missed here. In view of these circumstances it is impossible to regret that we are so soon to leave this crowded block where the life of Columbia has been centered now for forty years. The sojourn here has done for us very much what the wilderness did for the children of Israel. It has converted a simple college life into the highly organized life of a progressive university, so that we enter into our promised land much more capable of appreciating it, and of developing there the full measure of our opportunities, than if we had not had this intermediate experience by the way. In the meanwhile, we ought never to forget that the inherent life of Alma Mater has shown itself superior to time and circumstance, and has continued to develop here under every disadvantage, from the beginning to the end of this epoch. I trust that in her new home, the same inherent vitality will enable her to enlarge and develop, with increasing power, year after year and generation after generation.

SETH LOW

COLUMBIA COLLEGE—1858-1864

EDITORS OF THE UNIVERSITY BULLETIN.

Dear Sirs:—In compliance with your request, I send you some personal recollections of men and things at Columbia in its early days upon the present site.

The class of 1860, of which I was a member, was the last to enter at the old site in College Place. I did not, however, join the class until the fall of 1858, and the College had, therefore, been a year in its present location when I became a student. At that time, and for years afterwards, Madison Avenue was not open above Forty-ninth Street. Potter's Field was on Forty-ninth Street between Lexington and Fourth Avenues, and bodies were removed from there during the summer and fall of 1858. There was no way of getting over the railroad tracks on Fourth Avenue but by crossing on the level, and the approach from the east was, consequently, never pleasant and sometimes dangerous. Bull's Head cattle yards were on Fifth Avenue, east side, between Forty-third and Forty-fourth or Forty-fifth Streets, and the region about here was as unsettled as these remarks would lead one to infer. The residence of the President and the rooms in which the college exercises were held were in a building which was removed a few years ago and was originally the home of the Asylum for the Deaf and Dumb. The President and his large family lived, in more or less comfort, in one part of the somewhat spacious edifice, and the College was provided, more or less liberally, with laboratories, lecture and recitation rooms in the remaining part. Where Hamilton Hall now is were two dwellings, one of which was occupied by Professor Joy and the other by Professor John Torrey, the eminent botanist. The chapel was the present chapel and the library was the room above it. On the north-east corner of the block, where a good part of the School of Mines building now is, was an old paper factory, largely in a state of "innocuous desuetude." The only use made of it

at all was, if I remember aright, as a place of meeting for the Philolexian Society. On meeting nights, the members took their lives in their hands, met at this far away place, and there held high debate—and other exercises. The college block itself, when once it was reached, was rather an attractive place. The country about was open, and, to the west particularly, pleasing; the lawn in front of the asylum building was fairly well kept and was shaded by fine trees. The accommodations for the President's family and the students were not excessive, but, for that moderate and modest time, served their purpose. The curriculum was a good one and, in the main, was well taught; indeed, in some particulars, the courses and the conduct of them have not, in my opinion, been excelled anywhere. The number of students at that time was one hundred and seventy-three. There were no tutors or assistants, and all the teaching was done by professors. The School of Mines was not then in existence. The Law School had just begun, but it was conducted in Lafayette Place. The only students upon the grounds were the college students.

Charles King was President, and he was a gentleman in the best sense of the word. When a boy, and his father, Rufus King, was United States Minister to England, he attended Harrow School and was a fellow student there with Lord Byron. He occasionally delighted us with accounts of his life in England and with stories of the combativeness of his schoolmate Byron. When he hadn't the gout, he was one of the most agreeable of companions and friends; when he had the gout, his temper was apt to be high and his language severe.

Charles Anthon was professor of Greek. He was a man of great learning, the first of English scholars who, in his editions of various classical works, made available for all students the results of German investigation. His knowledge of his subject was accurate, he prepared himself with great care, his enthusiasm was inspiring, and his diction was elegant. At the conclusion of a lesson, he would read it all over to the

class, giving a beautiful translation, and woe be to any student who, on review of that lesson, was not able to give his exact words. He would forgive almost anything sooner than neglect in this particular. He had a very sharp and bitter tongue, which he exercised with great freedom upon any one whom he thought merited reproof.

Henry Drisler was professor of Latin. He was much more gentle and mild than Professor Anthon, not so particular as to translations, a ripe scholar, a very careful and painstaking officer, a teacher whose sense of justice and whose solicitude for the advancement and welfare of the students endeared him to generations of Columbia men and secured for him a noble and well merited testimonial on his retirement from active duty in 1894.

John McVickar was professor of the evidences of religion. He was well along in years at that time, having been graduated in 1804, and a professor since 1817. He had been professor of moral and intellectual philosophy, rhetoric, belles lettres, and political economy till the removal of the College, in 1857, when he was transferred to the chair of the evidences. His learning was extensive and accurate, and his character was such as to inspire respect and veneration and to endear him to all who knew him. He was the first, I believe, to deliver lectures in any college in this country on the principles of political economy. When he retired from active service in 1864, many old and distinguished alumni, who had been his pupils, attended the celebration held at the college grounds in his honor, to pay him their tribute of respect and affection.

Richard S. McCulloh was professor of mechanics and physics, and Charles Hackley was professor of astronomy. They were men learned in their respective subjects, but somewhat discursive in their treatment of them.

The department of mathematics was in an efficient state. Charles Davies was professor, and his son-in-law, William Guy Peck, was the adjunct professor. Both were graduates of the United States Military Academy at West Point.

Davies was the author of a series of mathematical text-books, which first introduced to this country the French mathematical methods, and which did much for accurate mathematical learning. He was suave in manner and philosophical in his mode of treating his subject. Peck was an excellent mathematician, an admirable teacher and, from his manliness and sincere interest in the students, a deservedly popular man.

Charles A. Joy was professor of chemistry. He had been largely educated abroad and had extensive correspondence with distinguished chemists in various parts of the world. He sometimes quoted to us opinions expressed in the letters of these distinguished men, and made us almost feel as if we had personal acquaintance with them. His lectures on fermentation seemed to be particularly pleasing to the students. To illustrate this subject, he not infrequently took them to places in the city to witness and study the process in the manufacture of a beverage, which has since become popular, called "beer."

Charles Murray Nairne was the professor of English, and an admirable one. He was a graduate of the Universities of St. Andrews and Edinburgh, and was a favorite pupil of the celebrated Dr. Chalmers. He was an elegant scholar, familiar with the best literature of all time, a mathematician of no little accomplishment, and a public speaker of more than ordinary power. He was very painstaking in teaching literary criticism and composition. We were required to write essays at stated times, which he read himself with great care and made marginal notes. Those essays which he deemed the best were read by their authors before the class. The distinction of having an essay selected for public reading was esteemed a high one and begat wholesome emulation. In my opinion it would be difficult to name a professor of English superior to Professor Nairne at that time.

The great philosophical historian, Francis Lieber, was professor of history—and there was no man under whom I had the good fortune to study who did me more good, I believe, than he. His method of teaching history seemed to

me to be a model one. The text-book used was Weber's *Outlines of History*. He would assign a certain portion of it to be read, and request that some one would prepare a synchronistic table. As such a table, from the use made of it, was of great interest, there was no lack of rival tables ready at the proper time. One was put upon the blackboard by its compiler; the Professor would examine it, call for corrections and additions, and when it was completed to his satisfaction, would ask—"Can any of you tell me why it is that when such an event was happening in England, such an event was happening in France, such another in Germany" and so on throughout the limits of the table; and would remark, "Of course you cannot—well, I will tell you." Then would follow a splendid lecture upon the genesis of the historical facts, and the spirit of the time which had these various manifestations. Lieber's reputation was world wide. He was a friend of Alexander von Humboldt, who highly esteemed him and urged him to accept a professorship in the University of Berlin. During our Civil War he was frequently summoned to Washington by the Secretary of War for consultation and advice. His personal appearance was attractive and striking, his speech was deliberate and impressive. His manner in public was usually grave and reserved; in private, among his friends, he was a warm-hearted, generous, witty, learned, and delightful companion. He was

"Lofty and sour to them that lov'd him not;

But, to those men that sought him, sweet as summer."

The Rev. Cornelius R. Duffie, now chaplain emeritus, was the chaplain of the College. Chapel attendance was obligatory. The classes assembled in their respective lecture rooms before prayers; roll was called; they then adjourned to the chapel, and immediately thereafter returned to their lecture rooms.

The course of study was very largely obligatory. In the Senior year, however, members of the class had the privilege of three separate courses—one called the course in letters,

one the course in jurisprudence, and one the course in science. The course in letters was the usual literary course, including both Latin and Greek. The course in jurisprudence omitted Greek and took more history and political economy. The course in science omitted both Latin and Greek and included more scientific study. Professor Anthon, whose prejudices were very strong, regarded those who chose the course in letters as his particular friends; and those who took any other course, no matter what might have been his previous relations with them, he looked upon as having offered him a personal slight and would have nothing more to do with them. I took the course in letters and never regretted it. Professor Anthon exerted himself to make that course as attractive as possible. He gave delightful lectures upon the literature of Greece, the domestic life of the Greeks, the amusements of their children, and all that went to make Greek life what it was. These lectures, together with those of Professors Lieber and Nairne, constitute the most cherished recollections that I have of my life as a student.

Of all the men connected with the College in the days when I was a student, whether as trustees or college officers, but three, I believe, remain: Dr. Drisler, professor emeritus of Greek; the Rev. Dr. Duffie, chaplain emeritus; and William Alfred Jones, librarian, 1851-1865. *Scri in Calum redeant.*

When the Civil War broke out in 1861, a number of students volunteered and went to the front. Those who were members of the class of '61 were regarded as having made good all deficiencies in scholastic acquirement, due to absence, by their patriotic service, and received their degrees with their class. Some of them appeared at Commencement in military uniform and created great enthusiasm. In the spring or early summer of 1861, there was a flag raising on the grounds in front of the old college building. There was a large gathering of officers, students, and their friends. The Hon. Hamilton Fish, chairman of the Trustees, delivered an inspiring address. Professor Lieber wrote, for the occa-

sion, a song on our Country and her Flag, which he called, from the refrain, *Freeland*. He regarded this song as one of the most successful efforts of his life, and, as a mark of his friendship, gave me the manuscript. He was profoundly stirred by the occasion and the events that gave rise to it, and doubtless imputed to the song merits that pertained only to the intellectual and patriotic exaltation that gave it birth. It was set, if I remember, to the tune of Old Hundred, and all joined lustily in the singing; but somehow the verse didn't fit the tune, or the tune didn't fit the verse, and it came off rather haltingly. The feeling was, however, too intense to find in the misfit of verse to tune any occasion for mirth. The times were grave and levity had no place. During the whole period of the war, excitement ran high, in the college as elsewhere. Many interruptions of the exercises necessarily occurred. In times of victory, there were thanksgivings, and in periods of defeat there were days of humiliation. There were more than a hundred of the alumni of the College in the army, and their careers were watched with great interest. The distinction of any of them for service in the field was a matter of rejoicing, and the death of any in battle or from exposure was severely felt. It is difficult at this time for any one, impossible for one who did not then experience it, to realize the intensity of personal interest and feeling that attached to every event of the war.

The early summer of 1863 was a period of great depression. The Union armies had not met with success and a pall of gloom settled upon the community. The draft riots, a formidable uprising of the unpatriotic, and vicious classes in the city, occurred. Angry mobs surged through the streets. It was afterwards said that the then professor of mechanics and physics was in active sympathy with the rioters and gave them the encouragement of his presence and counsel—a terrible charge, that could have had no foundation in fact but must have been due to the passion of the time and resentment at his subsequent action. When, however, the College was opened in the fall of '63, there was no professor of me-

chanics and physics; he had sent a letter of resignation stating that, as he was born at the South, it should occasion no surprise that he had cast his fortunes with the Southern Confederacy. The Trustees refused to accept his resignation and expelled him for having abandoned his post and joined the Rebels. Professor Rood was elected his successor early in 1864.

In 1864, President King resigned and Dr. Barnard was chosen in his place. Dr. Barnard was Chancellor of the University of Mississippi when the war broke out, and with difficulty escaped with his life to the Union lines. At the Commencement in 1864, President King delivered his farewell address, presented Dr. Barnard as his successor, and, in the name and by the authority of the Trustees, saluted him as President of Columbia College.

The formal inauguration of the President occurred in the following October. At that time, the Trustees received the Faculties, alumni, and invited guests in the Library (the room over the present chapel), whence they went in procession to the chapel. There the President-elect was inducted into office by Mr. Fish, Chairman of the Trustees, addresses were delivered to him, on behalf of the Faculties by Professor Nairne, and on behalf of the alumni by Dr. Henry James Anderson, president of the Alumni Association. Dr. Barnard delivered his inaugural discourse. Subsequently the President and Trustees received the professors, alumni, and invited guests at the President's house (the house in which President Low now has his offices). As I remember it, the reception was a very delightful affair. It was not large, as things go now, but it was choice.

Dr. Barnard began at once to make innovations. He supported with energy the establishment of the School of Mines, which had been authorized, but not commenced, under President King. As a consequence that school was opened in the fall of 1864. Much to the annoyance, not to say disgust, of Professor Anthon, the chemical laboratory was placed in the basement of the old college building, immediately under his

lecture room. But the success of the school was immediate and great, and it soon outgrew its limits. The old paper factory made way for a building for its use—and it has steadily grown and has become the series of successful Schools of Applied Science with which all are familiar.

It does not come within the scope of this informal and somewhat desultory letter to follow Dr. Barnard through his long and fruitful presidency of a quarter of a century. Suffice it to say that he found a good small college; he left a great potential university, which has been transformed, by the wisdom of his successor, into a well organized and successful university. This has all been accomplished upon the present restricted temporary site—and it is enough to make illustrious the period of forty years between the abandonment of College Place and the occupancy of the permanent site on Morningside Heights.

Respectfully,

J. H. VAN AMRINGE

COLUMBIA COLLEGE, NEW YORK, May 15, 1897

UNDERGRADUATE DAYS AT COLUMBIA

EDITORS OF THE UNIVERSITY BULLETIN.

Dear Sirs:—In the spring of 1868 I passed the entrance examinations at Columbia College; then I toiled through a hot summer, presented myself again in the fall, and managed to get admitted as a Sophomore to the class of '71. When my class had entered Columbia, only ten years had elapsed since the College had removed from the original site to the abandoned Deaf and Dumb Asylum on the corner of Madison Avenue and Forty-ninth street. It seemed to most of us then that Columbia was very far up town and in a lonely situation. The Grand Central station was not completed and the Cathedral of St. Patrick was not begun; and noisome cattle yards occupied the two blocks on Fifth Avenue from Forty-fourth to Forty-sixth Streets. Probably the Madison Avenue site

in 1867 was farther from the actual centre of the population of the city of New York than the Morningside site is now in 1897.

The main edifice of the old Deaf and Dumb Asylum stood on a little plateau (where the undergraduates now throw ball) and it had a detached building at either end. One of these still survives as the chapel; the other was torn down when Hamilton Hall was erected, long after I left college. Where the library now stands was the green, pleasantly shaded with old trees, only half a dozen of which still linger. Behind the President's house was an old sash-and-blind factory, in which the School of Mines had been started three or four years before. The original purposes of the building then standing on the block suggested to an envious professor in a minor institution of learning the inexpensive jibe that Columbia was housed in the home of the deaf, the dumb, and the blind. The same professor would probably find it an amusing coincidence that the College is now about to move to a site hitherto sacred to the insane.

Although the School of Mines was on the same block, there was then but little communication between its students and the College undergraduates. Few "Miners" were members of the more prominent fraternities. We students of the College were almost as remote from the students of the School of Mines as we were from the students of the School of Law; and the Law School was then inadequately accommodated in an old house in the Colonnade in Lafayette Place. The College of Physicians and Surgeons was on the corner of Fourth Avenue and Twenty-third Street, and at that time its connection with Columbia was very vague. There were no graduate students at all in those days, and we had, therefore, nothing in any way corresponding to the present schools of Political Science, Pure Science, and Philosophy. The College stood alone, although it had technical schools loosely allied to it. The University was so far in the future that no undergraduate ever gave a thought to the possibility of anything so remote. Three years after graduation the degree of A.M. was to be had almost for the asking.

And the College was a small college, with the narrow curriculum of the American college of thirty years ago. Looking over the catalogue of my Senior year, I see that my class had thirty-one men, the Junior thirty, while the Sophomores were only twenty-three; the Freshmen were thirty-six. There were eight professors in the faculty, and they were aided by two tutors. Of the professors from whom the class of '71 received instruction, only two are now members of the faculty of the College; one is the Dean and the other is Professor Rood. Dr. Charles Murray Nairne was professor of moral and intellectual philosophy and English literature,—that is to say, he alone had charge of all the subjects now under the care of the division of English and Literature, of the department of Philosophy and Education, and of the School of Political Science. To-day there are probably fifty men giving courses in the various branches then confided to the sole care of Dr. Nairne.

Attendance at chapel was obligatory and the brief service began at 9:40. At ten o'clock we went to our first recitation, at eleven to our second, and at twelve to our third and last for the day. There were no recitations after one o'clock; and before two we undergraduates had scattered to our homes, although in the chill days of the fall we sometimes lingered to take part in an artless game of football on the green. There was no gymnasium, and the first attempt at organizing athletics took place in my sophomore year. The library was open only one hour a day, from one to two; it was closed on Saturdays. It contained about twenty thousand volumes; and, so far as I know, no member of my class ever drew from it a single volume.

In those days the curriculum was as rigid as it was narrow. Our studies were prescribed for us all and we had all to take the same courses. In our Senior year a great innovation was announced and we were allowed certain options. We could give up Greek for the calculus, and we could take extra physics at the cost of neglecting Latin. These were, I think, the only electives offered to us. The only modern language

in which there was any instruction was German, and that could be taken as an extra at the early hour of nine in the morning. In the scientific courses we listened to lectures and we saw the professor perform experiments, but we ourselves were never admitted to the laboratory. In the classical courses we recited much as we had done at school; and we were marked at every recitation on a scale of ten, quite in school-boy fashion.

As I read over what I have written, a vision of those old days rises before me, and I see that we were a happy lot of young fellows, having a good time and unconsciously laying up wisdom against the hour of need. The opportunities offered to us then seem meagre enough now, when contrasted with the variety and richness at the command of the undergraduate of to-day; and yet I doubt if there were more than two or three colleges in the United States more advanced in 1871 than was Columbia.

BRANDER MATTHEWS, '71

THE SLOANE MATERNITY HOSPITAL

The completion of the new addition to the Sloane Maternity Hospital was celebrated on April 14th by throwing open its doors to over a thousand invited guests, who improved this opportunity to inspect the building and its equipment. This event marks a long step forward in the advance which has been made within very recent years in the acquisition of teaching facilities in the department of Obstetrics in the College of Physicians and Surgeons.

After Mr. William D. Sloane, the generous donor of the hospital, decided to undertake the erection of this addition, which is fully twice as large as the original hospital built in 1886-7, the work of construction was pushed forward as rapidly as possible under the constant supervision of Dr. McLane and Mr. Sloane. Through their careful planning and unremitting attention to details for the past two years, the

hospital, as it now stands completed, represents what is believed to be the best combination of facilities for obtaining the greatest possible safety of the patients, while they are exposed to the dangers incident to childbirth, with facilities for the clinical teaching of medical students in the art of obstetrics. In addition to Mr. Sloane's gift of the building itself and its furnishings, Mrs. Sloane has added to her previous benefactions by increasing the endowment of the hospital sufficiently to meet the increased expenditure for maintenance.

When the original Sloane Maternity Hospital was opened in 1888, it contained thirty beds, which were thought at that time to be an ample provision for all the purposes for which the hospital was created. As the number of applications for admission constantly increased and the need of a larger service for the students of the College was felt, the number of the beds was augmented from time to time, until in 1892 the limit of forty-five beds was reached. From January, 1888, to April, 1897, over 6,000 patients have been confined in this hospital, with a mortality and morbidity rate which is very low, if the character of the service, with its large number of serious cases, is taken into consideration. All this clinical material has been available for the teaching of the students of the College of Physicians and Surgeons during the past nine years, and several hundred nurses from the various training schools have during this period received valuable experience in obstetric nursing from the same source. Now, by the addition of seventy-two more beds in the new part, the usefulness of the hospital will be still further increased.

The new part of the hospital consists of seven stories and a basement, so joined to the old part as to constitute one building. A few details about the uses and furnishings of the new part will, it is hoped, be of interest.

In the basement are two marble bathrooms for the use of the patients on admission to the hospital. Their clothes, after disinfection in a room fitted up with special apparatus for this purpose, are stored in lockers, of which there are

175. Another large part of the basement is devoted to the laundry, in which all the machinery for washing, extracting, tumbling, and ironing, is run by electricity from the dynamos located in the college building. A dining-room for the twenty-six servants employed in the hospital, rooms for the janitor and elevator men, three storage rooms, two electric motor rooms, a fan room from which fresh air is forced to all parts of the hospital, a freight elevator, a mortuary, and several small rooms for various uses occupy the rest of the basement, which is connected by a subterranean passageway with the dynamo room of the College.

The first floor is devoted partly to administrative purposes and partly to hospital work. An office, a room for the Board of Managers and attending physician, a waiting room for patients, and a reception room for visitors, occupy the southern part of this floor. On the north side is a room for the examination of the patients who apply for admission to the hospital, but most of the space on this side is occupied by a large operating room, which projects out beyond the hospital building itself, so that it receives more light and is of greater size than would have been obtainable by any other arrangement. In order to secure cleanliness, as well as beauty, the ceiling and walls are of marble. The floor, made of bits of marble set in cement, drains towards the center. As this room is especially intended for the demonstration of obstetric operations to large sections of students in the fourth year of the curriculum, it is provided with fifty-one seats, arranged in amphitheatre form, on a steep incline. Numerous electric lights set in the ceiling, and two fifty candle-power movable lights, render all operative details distinctly visible at night, while by day abundant diffused light from the north is available. From the rear of the amphitheatre a passageway leads to the College building and to the Vanderbilt Clinic. Connected with this operating room are two large accessory rooms—one for the necessary preparations and the administration of an anæsthetic before the patient is taken into the operating room, the other for the use of the obstetrician and

his assistants in preparing for operations and for the sterilizing of the various instruments and dressings needed in this and the other operating rooms on the second and third floors.

On the second floor is a room twenty feet square, for the delivery of normal cases and for such operations as cannot be well demonstrated to a large section of students. There are on this floor also four wards of six beds each, and a nursery containing six cribs and all the necessary apparatus for the care and feeding of infants. Linen closets and lavatories and pantries, provided with steam tables and cold storage refrigerators, are found on the second, third, and fourth floors alike.

The third floor is exactly like the second. On the fourth floor a dining room accommodating forty patients (those waiting for confinement) occupies the space which on the second and third floors is used for delivery rooms. Otherwise this floor is like the second and third.

The fifth floor is given up wholly to the accommodation of the nurses. It contains a sitting room and library for the use of all the nurses, a sitting room and bedroom for the principal of the Training School and a similar suite for the assistant principal, and six rooms for twelve of the pupil nurses.

On the sixth floor are two dining rooms—one for the resident staff of physicians, and one for the superintendent of the hospital and for the nurses. A commodious kitchen, in which is cooked all the food for the entire hospital, is also on this floor; from the pantry connected with this kitchen an electric dumb waiter takes the food down to all the other pantries. Near the kitchen are two large rooms for the dry and cold storage of supplies. Three rooms for six of the pupil nurses and servants' rooms are also found here. The seventh floor accommodates twenty of the hospital servants.

Special attention has been given to the heating, cooling, lighting, and ventilation of the entire hospital. Fresh air, either hot or cold, as desired, is constantly being forced into every room; the vitiated air is driven out through flues. Provision has been made for lighting with either electricity or gas.

An electric passenger elevator, large enough to carry two patients on stretchers, runs from the basement to the seventh floor. An electric freight elevator carries supplies from the basement to the kitchen. A "house telephone" facilitates communication throughout the hospital.

Work has already been begun upon the old part of the hospital, which is to be thoroughly renovated and enlarged by the addition of another story and the remodelling of the roof, so as to harmonize with the architecture of the new part. When these improvements are completed, the old part (or original hospital) will contain the rooms of the superintendent, the rooms of the resident physician and his assistants, a library for the house staff, a study room and bedroom for the use of the students while pursuing the practical course of the fourth year, nine wards containing about forty beds, two small delivery rooms, six rooms for private patients, several isolating rooms, etc.

A brief reference to the method of teaching obstetrics in vogue no longer than ten years ago will show to some extent what an advance has been made in this department in so short a time. Formerly a course in obstetrics consisted of a series of didactic lectures, which were delivered to the students in the second and again in the third year of their medical course; these lectures were illustrated more or less fully with diagrams and models, but the student before his graduation was not required to see or attend a single case of confinement. His knowledge of the subject was hence necessarily wholly theoretical, and he gained his practical knowledge and skill at the expense of the patients whom he first attended after leaving the College. For the past nine years, however, since the Sloane Maternity Hospital was completed, the College of Physicians and Surgeons has been able to give a practical as well as theoretical training to its students, and no student has been allowed to graduate without having spent at least a week in the hospital, and given satisfactory evidence of possessing a fair degree of proficiency in the science and art of obstetrics.

Now, with the enormously increased capacity of the Sloane

Maternity Hospital and the extension of the medical course from three years to four, the Department of Obstetrics is able to give a very attractive and thorough course in this branch of medicine. Beginning in his second year, the student is tutored an hour every week from October to April, these lessons being illustrated with appropriate specimens, models, and diagrams. The third year is devoted partly to didactic lectures by the professor of obstetrics, and partly to practical demonstrations with the aid of models and living subjects. In the fourth year the student hears lectures upon obstetric operations, attends clinics and witnesses operations in the large operating room, and serves for two weeks in the hospital, during which time he sees all the confinements and is for all practical purposes a member of the house staff, besides receiving instruction daily from the resident physician. After such a course in obstetrics, extending over three years and embracing both theory and practice, it is firmly believed that the student will go forth well equipped for the practice of this branch of his profession.

ERVIN A. TUCKER

THE FACULTY OF APPLIED SCIENCE

The Faculty of Applied Science and the Faculty of Pure Science at Columbia University are the successors and heirs of the past history of instruction which has had its origin in the School of Mines Faculty, created after the formation of the School of Mines in 1863.

The history of a school or faculty involves a history which is both external or objective, and internal or subjective. The internal or invisible history conditions and determines the outward growth and development, but is, and should be, independent of the material environment in the matter of buildings and equipments. This internal history will be carried on unbroken to the new site of the University. The break in the outward or external history is very great when a uni-

versity is transplanted from one site to another, and a retrospective view of the history of the present Faculty of Applied Science will partake very largely of references to these external conditions.

The School of Mines had its birth in the inspiration of Professor Thomas Egleston, who was, from 1863 to 1897, the professor of metallurgy and mineralogy at Columbia. On his return from the Ecole des Mines in Paris in 1863, the only schools of applied science in America were the two military academies at West Point and Annapolis, the School of Civil Engineering at Troy, the Chemical Department of the Sheffield Scientific School at Yale, the Lawrence Scientific School at Harvard, and the Engineering School of the University of Michigan. None of these made any specialty of mining, and all practitioners of that department of applied science up to that date had to receive their training in science at the Freiburg schools in Germany, or at the schools of London or Paris. The St. Petersburg school was exclusively a national and governmental affair. The establishment of the School of Mines at Columbia in 1863 was followed by the results of the legislation which is identified with the name of Senator Justin S. Morrill, and which, under the name of the Land Grant Bill, was signed by President Lincoln in July, 1862. The various institutions which grew out of the favoring condition provided by this Act all belong to the period later than the creation of the School of Mines. It was the indomitable energy of Professor Egleston and the infectious enthusiasm of Dr. Charles F. Chandler which floated the enterprise, and it started for the very first year with the connivance of the governing body of the University, rather than with its support and backing. Sixty students, however, applied at the opening of the first year, which number grew to seventy-five before the term was over, and proved the existence of the need which the School aimed to supply, so that the support of President Barnard thus enlisted, the approval of certain active members of the Board of Trustees made the infant institution a part of the

university scheme. At the outset it found what accommodation it could in unoccupied basement rooms, until it was seen that a necessity was imposed for something more suitable for the growing requirements of enthusiastic students and more space must be provided. The first extension was into a building which had been originally planned as a paper factory, on the corner of Fiftieth Street and Fourth Avenue, and later a special but inexpensive building was constructed on the Fourth Avenue side. In these low-ceilinged, badly ventilated, and crowded quarters the chemical and blow-pipe laboratories and the drawing-room of the Engineering Department were crowded together with rapidly growing collections of minerals and geological specimens. Francis L. Vinton had been chosen professor of civil and mining engineering in 1864, and J. S. Newberry professor of geology and paleontology in 1866. The professors of mathematics, mechanics, physics, and chemistry were drawn from the faculty of Columbia College, and gave instructions in both departments then as now.

The School continued to grow and expand, and its graduates to earn a brilliant reputation until in 1874 and 1875, the first great extension of any of the college buildings was begun for the specific accommodation of the work of the School. It will be noticed that the College had erected no buildings on the Forty-ninth Street site up to this time, except those which were required for the School of Mines. The other university work was carried on in the buildings which had been bought with the block from the former owners, and of which the present Chapel and the building occupied by the administration offices are the only remnants. These new buildings of the School of Mines were the Fiftieth Street building, with its enormously improved laboratory and drawing-room accommodations, high ceilings and abundant window surface, and part of the south wing on Fourth Avenue. During the time of the erection of the Fiftieth Street building, part of the work of the chemical laboratories and all of that of the metallurgical department, which had been accommodated in

the old building, were carried on under great disadvantages wherever space could be found for them. The blow-pipe laboratory was conducted that winter in the basement of the Columbia College building of that day and almost entirely by artificial light.

In 1877 (two years afterwards) a consideration and extensive re-organization was effected, by action of a committee of the Trustees proceeding in coöperation with the opinions which they had elicited from representative graduates. The chair of civil and mining engineering was abolished, and the chair of engineering created. Professor W. P. Trowbridge, who had served in the army and on governmental engineering work, and had later been vice-president of the Novelty Iron Works, from which position he was called to the chair of engineering at Yale, came to Columbia, and the positions of adjunct professor in mining and of instructor in mechanical engineering were created. The strength which was imparted to the engineering side of the Faculty by these changes was at once felt in a renewed and increased enthusiasm and accession of numbers. Meanwhile the building to accommodate Columbia College, which is now known as Hamilton Hall, had been started to replace the inadequate and defective building in which the College had been carrying on its work for so many years, so that it became possible to transfer some of the work of the engineering department into the old building of Columbia College. The entire south side of the second story was occupied by the sub-division of mechanical engineering, which at that time was in full charge of the drawing-room work of the third and fourth classes, and some of the best work of the department during that period was there done. About this time (1881-82) the department of architecture was created by the Trustees, co-operating with the generosity of Mr. Schermerhorn, and accommodation was found for the first work of this department in room which was made for them in the drawing-room of the engineering department of this old building.

Again the rapid increase in numbers and the inadequacy of

the accommodation furnished induced the Trustees to provide additional space, and the present Fourth Avenue building was designed to replace the earlier structure, which was torn down to make room for it. The south end of the Fourth Avenue building, which had been constructed at the time that the Fiftieth Street building was made in 1873-4, was carried up two more stories, and its floor levels changed to meet the requirements of the new building. Just before this time also, the necessity for adequate heating and ventilation facilities for Columbia College and Hamilton Hall induced the erection of the first boiler house. Into this the two boilers, which had been located in the south addition of the Fourth Avenue building, when the Fiftieth Street building was erected, were transferred, and additional boiler power furnished to meet the requirements of the condition of the buildings. This change permitted the first testing laboratory to be started. The School of Mines had one of the first commercial testing machines built in 1871, but up to this time it had been inadequately located in an upper room of the Fiftieth Street building.

The construction of the Library, coming about at the same time that the new Fourth Avenue building was erected, compelled additional power to be put into the boiler house, although it still remained a subterranean structure, except at the lowest part of the campus. With the completion of the Fourth Avenue building the departments which had been in the old college building, were transferred to new quarters, and the conditions which began in that year remained essentially unchanged until it was decided, in 1889, to establish a two years' post-graduate course, for the degree of electrical engineer. Professor Francis B. Crocker, a graduate of the School of Mines Course in '82, was called to the position of adjunct professor of electrical engineering, and in 1892 the four years' course was created. To accommodate it and the development in mechanical engineering lines incident to the needs of a proper testing laboratory, the Trustees were induced to build the last and smallest structure on the present site, which was made by raising the power house so

as to build in another story above it, and to erect on the foundation of the old vaults a three-story structure. The lower floor of this was made the carpenter shop of the administration department of the University, and the two upper floors were devoted to the needs of the electrical and mechanical departments for laboratory uses.

The internal growth of the School of Mines Faculty was signalized by the successive additions of the professor of mechanical engineering in 1882, the additions of adjunct professors in physics and mathematics, architecture, and mineralogy, until the first serious breaks in personnel came with the illness and death of Professors Newberry, Peck, and Trowbridge, which all occurred in a short interval in 1891-2. The death of Professor Trowbridge resulted in a sub-division of the chair of engineering into its component parts; the formation of professorships of electrical engineering, civil engineering, and an adjunct professorship in mining. The death of Professor Peck was followed by the coming of Professor R. S. Woodward and the creation of an adjunct professorship in his department; Professor Newberry was succeeded by Professor James F. Kemp.

Shortly after President Low took office there was made manifest the existence in the old School of Mines Faculty and elsewhere of a group of departments having practically no relation whatever to mining, but a relation to science which naturally grouped them in the only existing faculty of science. To meet this embarrassment and to provide for an elastic growth in other departments having but loose relations, or none, with applied science, the Faculty of Pure Science was recently created, and it has been but a natural development of time that shortly thereafter the recognition of the group of somewhat independent schools which had grown up under the growth of the School of Mines in these years of active development, should have made it seem wise that this group of schools should be presided over by the Faculty of Applied Science, which took the place and functions of the old School of Mines Faculty. The School of Engineering,

the School of Chemistry, and the School of Architecture were respectively recognized and set off from the parent School of Mines stem in 1896, by an amendment to the University Statutes.

The changes and development out of and from the old School of Mines trunk will be emphasized at the new site by the circumstance that the departments of geology and metallurgy are to be located in Schermerhorn Hall; that of general science at the northeastern end of the block of new buildings; chemistry, architecture, metallurgy in the northwest, or Havemeyer Hall; and the engineering departments are to find their space in the special Engineering Building. Mathematics and physics, as at the present site, will be conducted outside of the buildings devoted to any part of the old School of Mines idea, in the building devoted to Physics on the east side. The existence of a single building to be known by the name of the School of Mines will thus no longer exist as a reason for blanketing the widely different departments under the control of the Faculty of Applied Science by a single school designation, and it is believed that substantial advantage will be derived from the change and from the new conditions which the new site will introduce. The possible development of the laboratories of mechanical engineering, which could not occur at the Forty-ninth Street site for lack of room, the mining laboratories, the metallurgical laboratories, and the new chemical laboratories will all be evidences of progress and great opportunity.

FREDERICK R. HUTTON

ANTHROPOLOGY AT COLUMBIA

Anthropology is perhaps the newest of the sciences. Its materials have indeed long been in process of collection. The tales of travelers are recounted in numberless volumes and the spoils of expeditions are exhibited in costly museums. The data of anthropology have contributed to the advance of

many sciences, yet it is only at the present time that they are being built up into a structure having such definite form as to deserve the name of a special science. It is indeed natural that science should cover first the fields where the subject matter is most stable and most accessible to experiment. Thus, during the first part of the present century, the most important advances were made by the physical sciences; then biology made the greatest progress; now, at the end of the century, it seems likely that the sciences concerned with man will become leading. Anthropology, the science of the development of mankind, must henceforth take its place among the sciences.

Anthropology, unlike most of the other sciences, has not been fostered by universities; it has developed until it has compelled universities to recognize its claims. An effort made only last year to establish the first chair of anthropology in an English university was unsuccessful. But the German universities, especially Berlin, now give adequate recognition to the science, and there is at Paris a school of anthropology with many professors. In Italy criminal anthropology has received marked academic recognition. In America courses in anthropology were established about ten years ago at Harvard University and at the University of Pennsylvania. It was one of the first subjects introduced into the curriculum of the University of Chicago. Now, within the past three years, Columbia University, in its great growth, has developed work in anthropology, a forward movement important both for the science and for the University.

It is significant of the wide reach of anthropology that the three officers of the University now giving courses in the subject are attached to three different faculties. Dr. William Z. Ripley divides his time between the Massachusetts Institute of Technology and a lectureship under the Faculty of Political Science. His leading interests are well shown by the important Lowell Institute lectures on the racial geography of Europe now being published in successive numbers of the *Popular Science Monthly*. The relationship of such subjects

to statistics, sociology, and history is evident. Dr. Livingston Farrand gives courses both in psychology and in anthropology. The subjects he treats, such as primitive culture, the origin and development of language, art, religion, social customs, etc., are so closely related to psychology as almost to merge with it. In order to understand the development of the individual mind we must study the development of mind in the race and the interrelations of the individual and of society. This department of anthropology is in fact called "Völkerpsychologie" by the Germans. Dr. Franz Boas was appointed lecturer in physical anthropology at the beginning of the present year, and divides his time between the University and the American Museum of Natural History. Dr. Boas has carried out investigations in a wide field and has an international reputation as a leader in modern anthropology. His courses on physical anthropology treat especially the application of statistical methods to biological problems, and are important for students in a wide range of sciences. Dr. Boas also offers a course in North American languages which is of value to all students of comparative philology.

The intimate affiliations of anthropology with other sciences are sufficient guarantee of its value as a department of a university. The statistical methods of anthropology have been applied by Dr. Boas to the study of the child's development, and must be understood by all students of pedagogy. This is of special interest in view of the relations of Columbia University with the Teachers College. Anthropology connects zoölogy with sociology, and as the study of evolution is now leading in the biological and social sciences, the investigation of the primitive races of men is essential. Even the geologist cannot afford to ignore the subject. The importance of anthropology for sociology is shown by the treatment in Professor Giddings's *Principles of Sociology*; statistical science and anthropology are as web and woof; history begins with anthropology and can never ignore it. All the sciences under the Faculty of Philosophy come in touch with anthropology. The interrelations with psychology and edu-

cation have been noted; those with ethics and philosophy are almost equally close. Philology must include unwritten languages, and, like history, must begin with the materials of anthropology. Literature, the plastic arts, and music must trace their origin to the same source. Even the professional schools are concerned with the adequate representation of anthropology at the University. Thus, human anatomy must continually call upon anthropology in its study of types and varieties. Hospitals and asylums have long profited from the labors of the anthropologist. In Italy there are special professorships of criminal anthropology in the schools of law. That anthropology is appreciated by university students is demonstrated by the fact that the elective course offered by Dr. Farrand and Dr. Ripley is this year attended by fifteen students.

As a department of anthropology in Columbia University will be of value to every faculty and school and to nearly every department, so the strength of Columbia University as a whole will build up a strong department of anthropology. There is an immediate need of students specially trained in anthropology, and more in America than elsewhere. The intermixture of races, the negroes, the remaining Indian tribes, and the rich prehistoric remains in North, Central, and South America offer unusual fields for investigation. Much of the material is disappearing, and haste must be made or it will be gone. The Bureau of American Ethnology spends large sums annually in this work, and museums and societies send out costly expeditions. The results will undoubtedly be greatly enhanced in value when all explorers, curators, and students have had the advantages of an adequate university training. We may thus expect much from the important expedition now being sent by President Jesup of the American Museum of Natural History, at a cost of \$30,000, to the Northwest Coast, under the direction of Dr. Boas, who will be accompanied by Dr. Farrand.

New York City owes more to Columbia University than it as yet realizes, and in turn the University profits much from

its position in one of the world's greatest cities. A department of anthropology will gain especially from other institutions of the city, and is, if only for this reason, likely to become quickly one of the leading centers of anthropological study and investigation. The connection of Dr. Boas with the American Museum of Natural History is especially fortunate, as the rich treasures of the Museum are placed at the disposal of students, and need not be duplicated by the University. The New York State Pathological Institute has begun extensive investigations of the defective classes in prisons, reformatories, and asylums, and will coöperate with the University. Indeed, all the libraries, academies, museums and other institutions so well represented in New York City will contribute their share toward building up the work in anthropology now so well inaugurated by Columbia University.

J. McKEEN CATTELL

A LETTER FROM PRESIDENT SAMUEL JOHNSON

[The following autograph letter from President Samuel Johnson, written from Stratford in 1744, ten years before his election as president of King's College, has recently been presented to the University by Mr. Samuel P. Avery. It is not known to whom the letter was addressed.]

STRATFORD April 18, 1744.

Sr.

I am very humbly obliged to you for your's of March 26. I am glad if Mr. Watkins has proved so acceptable among your people that you conceive good Hopes of his being useful in promoting the good Ends of the Society* in your parts. What you mention to me of the 500 Acres of Land is indeed an Affair of very considerable Importance to that purpose: And I doubt not, (it seems so clear a case,) but, if it were properly recommended to the Bp or Society, it might be obtained & be of great public Advantage towards the pro-

* The "Society" alluded to is doubtless "The Society for the Propagation of the Gospel in Foreign Parts."

moting of Religion & Learning in the Course of time, & would certainly be a strong Inducemt. to the Society to send a Missionary among you. But it appears to me that Mr. Commissary Vesey is the proper person to make a Representation of it as it is an Affair that lies within his province: however if you can point out anything to me within my power, whereby I can be useful in bringing it to pass, I should gladly assist in it. But I think it would not fail of Success if your Commissary should apply to the Society to desire their Influence with your Governr.; or perhaps only your own mentioning it to him would answer the End, if such a Disposition of it as you speak of be in the Governour's power. I doubt Mr. Watkins, who was obliged to spend what Fortune he had in getting his Education is scarce able to defray the Expence of his passage & undertaking in going for Orders, nor are his Friends here able to do much for him: it would therefore be a good Charity if you & Mr. Nichols could influence any good Gentlemen in your province in making a Collection towards defraying his Expences in this undertaking.

I am much obliged to you for the Observations you have made upon Bp Berkeley's prin[s] [*Principles?*] that I lent you. I take it that the great Design of that Gentleman in what he wrote, was to banish Scholasticism & all talk without any meaning out of philosophy, which, you very well know, has been the Bane of Science in all other parts of Learning, as well as in Religion & Morality. Mr. Locke went a great way in this, & did much Service, but yet, while he continued the Doctrine of Abstract Ideas, he was led to think & teach that there are some Ideas common to several Senses, in which the Bp justly suggested he was mistaken; & indeed, to me it looks as if he had demonstrated against him that tangible & visible Extension are things *toto Coelo* different tho' they both go by the same general Name, & so of the rest.

If indeed you mean nothing by Matter but what is immediately perceived by Sense; as you do not at all differ from what he would be at, so you would, in this case, be

right in thinking that a great part of his Book is only a Subtil dissertation about the use of Words: But if you conceive Matter to be something abstracted & prescinded from all the immediate Objects of the Senses, according to the old Scholastical Say of it, that it is *neque quid, neque quantum, neque quale, neque quod potest digito demonstrari*, you might perhaps think that a meer dispute about words was the very thing, & that only, which he opposed, & that he had a great deal of Reason so to do. As to his Mathematical series I confess I am not versed enough in the Sublime Mathematics to be a judge of them, & so can pronounce nothing on this Subject. I am very loth to give you the trouble of transcribing, otherwise I should have a great Curiosity to see what you have wrote upon it, in order that I might make a better Judgment: but this is too great a Favour for me to ask, tho' I am very thankful for your kind offer. I am much obliged to you for this Copy of the philadelphia plan for the promoting of useful knowledge, & wish Gentlemen of Capacity for it may encourage it. I am

Sr. Yr most obliged
humble Servt.
Samuel Johnson.

THE MAPES MEMORIAL GATE

In August, 1891, Herbert Mapes, '90 Arts, '92 Mines, was drowned while bathing at Fire Island. His friends and classmates, desiring to erect a memorial to him as "a good student, a good athlete, and a man filled with the proper kind of college spirit," subscribed the money necessary to place wrought-iron gates at the entrance of the present site. As the University was then considering the removal from Madison Avenue to Morningside Heights, it was deemed advisable to postpone the execution of the work till such time as the general scheme for the improvement of the new site had been decided upon. The entrance to the University grounds at

One Hundred and Nineteenth Street and the Boulevard was considered the most appropriate place, and here the Mapes Memorial Gate will be erected during the summer and thrown open when the University takes possession of its new buildings.

The gateway consists of an entrance for carriages, in the centre, through double gates, and two single gates for pedestrians. The total width is forty feet and the height in the centre is about twenty-four feet above the sidewalk. The iron cornice continuing across the entire width supports ornamental pediments. The seals of the Province and of the City of New York are incorporated in the design above the side entrances, and in the central portion is placed the seal of the State of New York, supported by eagles, and the date of the erection of the memorial, the whole being surmounted by a free adaptation of the University seal. The lady whom we are accustomed to see seated upon her throne has risen to the occasion, and the children about her knees have become sturdy lads, but the artistic license which the architects have assumed is justified by the clever use they have made of it. On one of the granite posts separating the carriage entrances from the side gates will be carved "In Memoriam, Herbert Mapes, '90 Arts, '92 Mines. Obit, 1891;" On the other, a wreath of laurel and a palm.

The committee appointed to take charge of the memorial consisted of Messrs. Lloyd Collis, Ludlow Chrystie, and H. S. McKee. Messrs. Lienan and Nash, architects, were chosen by the committee to prepare plans for the gateway, and the frontispiece of this number of the BULLETIN indicates that they have performed their work in a very artistic and appropriate manner.

EDITORIALS

As this will be the last number of the BULLETIN issued while the University remains at the present site, it has seemed appropriate to the editors to turn the attention of our Alumni and friends to the past rather than to the future—to call up memories and associations connected with Forty-ninth Street rather than to explain our hopes and plans for the welfare of the University at Morningside. We came here a small college, we leave here a great university. How great the change has been, and how it has been brought about, has not been more clearly shown than in the leading articles of this number.

Henry Marion Howe, A.M., S.B., was elected by the Trustees at their April meeting to succeed Professor Thomas Eggleston, as professor of metallurgy in the Faculty of Applied Science. Professor Howe graduated from Harvard College in 1869, and thence entered the Massachusetts Institute of Technology in its department of geology and mining engineering, receiving his B.S. in 1871. Through the influence of the late A. L. Holley, he was appointed superintendent of the Bessemer Steel Works of Joliet, Ills., in 1872, and in the following year made a prolonged investigation for the Erie Railway of the causes of the failure of their rails. In 1877, Mr. Howe turned his attention more to copper metallurgy, and constructed furnaces for copper smelting in Chili and complete plants for smelting and refining in Canada and in the United States. These works were erected and operated by Mr. Howe after they were completed. It is in his relations as a consulting metallurgist and mechanical engineer, and as an author, that Mr. Howe has been latterly best known. He has been a frequent contributor to the *Transactions of the American Institute of Mining Engineers* and of the *Society of Mechanical Engineers*. Articles on *The Nomenclature of Iron*, *The Patience of Copper and Silver as Affected by Annealing*, *The Contraction of Iron on Sudden Cooling*, a series of papers entitled, *What is Steel*, and a bulletin of the United States Geological Survey on *Copper Smelting*, may be named among the most considerable of these.

It is, however, on his masterly work on the *Metallurgy of Steel* that Professor Howe's greatest fame thus far has rested. This is one of the monumental treatises on the subject with which it is

concerned, and its exhaustive character, together with the sound scientific basis upon which it is founded, led to one of his most distinguished honors, the Bessemer Medal, awarded by the Iron and Steel Institute of Great Britain for distinguished excellence or achievement in that field. This honor has been given to but three Americans; the other two are Mr. Abraham S. Hewitt, who received it for his work as a pioneer, and Mr. John Fritz, the creator of the great establishment of the Bethlehem Iron Company.

Professor Howe is delivering special lectures in the University in the lines of his specialty during the spring of 1897, and will begin his regular assignment of duty in the autumn.

Graduate work in the Department of Literature was first seriously undertaken in 1895-96, when three students were registered as candidates for the higher degrees, having their major subject in literature. In 1896-97, in view of the need of providing a second year of instruction for these students, and also in view of the applications of students intending to enter upon the course, it was decided to plan a fully developed scheme for the Ph.D. degree, involving three years of study and defining the requirements for this degree. Such a scheme was adopted, and by the voluntary coöperation of an instructor from another department, it was found practicable to put it into effect for the first two years of the course. In 1897-98 it will be necessary to provide for a third year of study; and in consequence of this Mr. Henry Osborn Taylor has been appointed university lecturer, with work in the first and second years. The appointment of Mr. Taylor thus marks the complete development of the original plan, the establishment of a graduate course of three years.

Mr. Taylor is a graduate of Harvard, '78, and of the Columbia Law School, '80, where he was a prize student. He also studied in Germany. He entered the New York Bar and was in regular practice in this city for a few years, during which he published a work, *Taylor on Corporations*, which is still in use in several law schools and is highly regarded. Ten years ago he withdrew from the practice of law, and devoted himself to private study in the history of religion, literature, and art, the first results of which are contained in his recently published work, *Ancient Ideals*, which has been well received both here and in England. It is of the nature of a résumé of the results of the labor of specialists, with much original comment, and some valuable critical contributions of

his own, especially upon the ethical and literary sides. The department is fortunate in obtaining the services of a scholar so well informed in the learning of the subject, trained in the severe and definite methods of thinking and presentation natural to a lawyer, and yet with a predominant interest in the history and interpretation of the permanent spiritual results of past thought and emotion in philosophic and artistic forms. It is natural to expect that, in his teaching, the book learning of an exceptionally equipped private scholar will be devoted to the aims of culture.

As now constituted, the graduate work of the department requires three years of study, made up of five hours by Professor Woodberry, three hours by Professor G. R. Carpenter, one hour by Professor Brander Matthews, and four hours by Mr. Taylor. The range of this instruction is somewhat greater than appears on the surface of the statement, inasmuch as some of the courses can be taken for two successive years, the subject being changed. In 1897-98 Professor Woodberry will attend to the work of the Seminar, in the third year, to which it is confined, and to special research in the sources of Spenser, and to the English Romances; Professor Carpenter to the history of lyric poetry in the Middle Ages and the Renaissance, Professor Matthews to Molière, and Mr. Taylor to the literary development of the Hellenic world and the history of the mediæval epic. All these courses are exclusively for graduate students; and with the exception of the course in Molière, they are open to women on the same terms as to men.

The unexpected success of the department during the past year seems to justify the establishment of the course, though it has been somewhat at the expense of the undergraduates, inasmuch as Professor Woodberry has been forced to omit two important undergraduate courses, though still giving two. It is plain that the department is insufficiently equipped, and that the undergraduates suffer thereby—a fact of which they reasonably complain. On the other hand, during the past year thirty-three graduate students have been registered in the graduate courses, and of these fourteen have their major subject in literature. Eight of these students are women, of whom three have their major subject in literature. If this result of the first year's offer, which is in no way due to special effort and encouragement, were to be repeated, it must be granted that there is here an opportunity for usefulness which the department should not neglect. It is true that the giving of the Ph.D. degree in a subject which is treated mainly for the purposes of

culture with only so much of learning, in the technical sense, as shall suffice for the intelligent basis of such culture, is a novel thing, and must be regarded as experimental; it is believed, however, that the strict requirement of three years of exclusively graduate instruction, no undergraduate course being allowed to count toward the degree, is a sufficient precaution while the matter is still in an experimental stage; and, apart from the question of this degree, it is clear that the study of literature in these ways is likely to be an object of desire to mature students.

It would have been imprudent, if not impossible, to develop the department upon these lines, had not the college library been materially strengthened in all the sections of literature within the past two years. Fortunately Professor Woodberry was enabled to command a considerable fund for this purpose, and the books purchased therewith are known as the *Ex Dono Amici Litterarum* collection. It was a condition of the gift that a list of these books should be printed, and it is now on the point of issue. It affords a useful commentary on the purposes of the department. A large proportion of the fund was devoted to the uses of the undergraduate students, with special regard to the English courses given by Professor Woodberry. Reprints of older English literature, privately issued books, and the issues of societies were especially sought, and these collections approach completion for practical purposes, except for the omission of unusually expensive sets, such as the Roxburghe and Maidment publications; where the list appears imperfect, as in the Collier and Halliwell Phillipps sets, the reason is that the missing titles were already in the library. Another considerable section is devoted to dramatic history in all literatures, and to plays in English not contained in collected editions. We shall, however, make a further comment on the list when it has appeared; for the present we are desired to say that a limited number of copies are to be printed for distribution, and one will be sent to those who apply for it until the number is exhausted. Its titles indicate the lines of interest of the department, and the lines of possible research. In addition to this special collection the library has expended from its own resources considerable sums, and a very full collection of foreign dissertations on English and Romance literatures has thus been provided, together with a large body of books. The library is thus sufficiently stocked for the purpose of research along

some lines, but in general the sections of literature are not equal in efficiency to those of economics, science, and philosophy, and large additions must still be made.

The recent gift of Mrs. Josiah M. Fiske to Barnard College of \$140,000 permits the immediate construction of the third hall projected by the Trustees. Fiske Hall will correspond with Brinckerhoff Hall in position and external architecture, but will be arranged within as a dormitory for the accommodation of sixty students. The arguments so forcibly urged in favor of dormitories for Columbia are even more cogent in Barnard's case, and Fiske Hall will undoubtedly make for the health, wealth, and standing of the College. Brinckerhoff and Milbank Halls are so far advanced as to leave no doubt of their fitness for occupation in the autumn, and their æsthetic value is daily more apparent. A picturesque detail is the five cartouches placed at either side of the main entrance and in three panels of Brinckerhoff Hall, bearing the Barnard, Milbank, and Brinckerhoff arms, the crest used by Dr. Arthur Brooks, and Miss Weed's initials. The buildings contain offices, class-rooms, and laboratories for the accommodation of about 500 students. The physical, biological, and chemical laboratories are situated in the first, second, and third stories respectively of Brinckerhoff Hall, where the auditorium also occupies a portion of two floors. The general class-rooms and instructors' rooms, the reading-room, the faculty room, and the offices of administration and reception rooms are in Milbank Hall. A large square room at the top of this hall, commanding the beautiful prospect of the palisades, is set aside as a lunch room.

The provision for laboratories in the new Barnard, though ample for the present, will probably be fully used as the result of the impetus given to scientific study by the recent action of the Faculty of Pure Science. On the 4th of January last the Trustees of the University extended to this Faculty the right already possessed by the Faculties of Philosophy and Political Science, of admitting auditors, and according to its latest circular the Faculty of Pure Science has made liberal use of its new prerogative. By the agreement between Barnard and the University the admission of auditors to a course operates to admit to it, with the status of regular students, women registered at Barnard College. University lecture courses

by Professors Rood, Osborn, Wilson, Kemp, Hallock, Pupin, Woodward, Jacoby, Fiske, Cole, Dean, and Underwood, and other officers, will accordingly be open next year, to the number of thirty-eight, to properly qualified women. In most cases, however, laboratory work will be done at Barnard College.

The opening of the new year will witness for the first time the unhampered working of the reciprocal arrangement between the University and Teachers College. The latter has now become fairly acclimated on the Heights. Its buildings have just been completed at a cost, including land, of about a million dollars; its teaching staff is well organized, and the arrangements for welcoming Columbia and Barnard students of education are fairly complete. This arrangement has now been in force four years, and, in spite of the embarrassments of time and space, has worked fairly well. Each of the twelve courses in education offered by Teachers College has been elected by students of Columbia and Barnard as candidates for the degrees of A.B., A.M., and Ph.D., and Teachers College students have followed courses in Columbia and Barnard. Thus far, however, the work has been only preliminary and in a way experimental. Next year there may be expected larger numbers, greater regularity in attendance, more definite requirements, and more satisfactory results.

The advantage of this affiliation for all concerned will become more and more apparent. To the Teachers College the immediate presence of the University will mean a liberalizing influence which is regarded by the promoters of the College as essential, and will give increased opportunities for showing what is meant by the "higher training of the teacher." To the University the College brings, in particular, the opportunity to observe, apply, and test educational theory in practice. Teachers College has eleven departments and fifty-five teachers, of whom forty-five are engaged directly in the training of teachers. It offers nine parallel lines of work, each leading to a distinct specialty in the field of elementary or secondary education. Its staff has been recruited largely from university men and women, the graduate courses of Harvard, Johns Hopkins, Princeton, Chicago, and Columbia having been recently drawn upon for teachers. The budget of the College for the coming year reaches a total of \$125,000, \$60,000 of which, or the income of a million and a half, is supplied in cash by the subscriptions of private individuals who have faith in the ideas for which the College stands.

It is interesting to remember, also, that Teachers College has always had a distinctive character. Its liberal studies and practical bent make it something more than a school of pedagogy, in the sense in which that term is sometimes used; its professional studies, method, and purpose differentiate it sharply from a college of liberal arts, while in point of spirit, staff, and material equipment it is naturally allied with a university.

The time is ripe for the kind of work for public education which it is the province of the University to do. During the next few years Greater New York will be the scene of a momentous educational development. In this development the interests of public education throughout the country are at stake, for Greater New York is a type of the country at large; and the affiliation of these institutions, both of which have been identified with the movement from its inception, will be one more factor in the culmination now at hand.

The use of the lecture rooms of Columbia University for meetings of societies has become so general that the removal to the new site will doubtless be an occasion of genuine regret to many of the organizations which have enjoyed its hospitality at the present buildings. During the past year an unusually large number of local societies have met regularly within our walls, and several national associations of considerable importance have held their annual meetings or conventions here. Naturally the professors and other officers of instruction have been prominent in the work of these bodies, which, in addition to affording opportunities for discussion, are often instrumental in bringing to the general public information as to advanced studies and investigations in the fields of science, philosophy, and letters. Of the national organizations, the first meeting during the college year was that of the National Academy of Sciences, in November. The Christmas recess brought the annual meetings of the American Historical Association, the Church History Association, and the Society of Biblical Literature. During the same period the American Folk Lore Society was in session here, and a popular lecture was delivered under its auspices. From time to time the Archæological Institute has met in Hamilton Hall and the American Mathematical Society has held monthly meetings in the rooms of the Department of Mathematics. The New York Academy of Sciences has met weekly at Columbia for many years, and its officers and Council are composed, to a large extent, of Columbia profes-

sors. The New York Society of the Archæological Institute of America also conducted, during the spring, a series of meetings with lectures on archæology. The Torrey Botanical Club holds fortnightly meetings, and the New York Electrical Society and the New York Schoolmasters' Association monthly meetings—all in the buildings of the University.

The foregoing list, by no means an exhaustive one, serves to show the diversity of interests represented, and the extent to which the University gladly extends its hospitality to national and local institutions devoted to scholarship and education. While the new site will present greater advantages for extended meetings and conventions, it is perhaps to be feared that the distance from the heart of the city will for a time diminish somewhat our opportunities in this respect.

Botany and Barnard College have lost an earnest and devoted worker by the death of Dr. Gregory. Her loss is particularly sad just now when Barnard is at the threshold of its new and enlarged career, its scope and accommodations widened, and its new home nearly ready for occupancy. That Dr. Gregory was one of the principal attractions of the College in the early days of its career, cannot be denied, for at first the number of special students in botany exactly equalled, for three successive years, the total number of students in the College. She gave herself enthusiastically to her work and spared neither her time nor her strength in her devotion to her pupils, encouraging them to do original investigation and showing them by her own work and guidance in the laboratory how to do it.

Emily Loriva Gregory was born at Portage, New York, December 31, 1841. She received her education at Albion Seminary, and after graduating from there taught at Dunkirk (Fredonia) Friendship Seminary, and earned enough to go to Cornell University in 1876. Here she studied botany and literature and took her degree as Bachelor of Literature in 1881. She held a position at Smith College from 1881-1883 as teacher of botany, and the following winter had charge of the laboratory work in botany at the Harvard Annex. In 1883-1884 she went abroad and studied for two years at Strasburg and one year at Zürich, where on July 23, 1886, she received the degree of Doctor of Philosophy, having been one of the earliest of American women to whom this honor was accorded. On her return to America she held a position

at Bryn Mawr for two years as associate in botany to Professor E. B. Wilson, who was then professor of biology at that institution, and during the following winter she was again associated with him at the University of Pennsylvania. In 1889 Dr. Gregory was appointed instructor at Barnard College and in 1896 professor. She was an associate editor of the *Bulletin of the Torrey Botanical Club*, to which she contributed many articles and reviews, a member of the Society of American Naturalists and the American Association for the Advancement of Science, and a contributor to the *Botanical Gazette*.

The following minute was adopted by the Executive Committee of the Board of Trustees of Barnard College on Thursday, April 22, 1897:

“Professor Gregory gave to Barnard College through the eight years of its existence a service in the highest degree loyal, enthusiastic, and successful. Her influence in creating and maintaining a high standard in scientific work was of great importance in determining the character of the College. She had the good fortune to possess, together with unusual intellectual gifts, the graces of character requisite to make them effective, and her scholarship was in the service of kindness, of courage, and of truth. The College bears witness not only to her love of sound learning, but to the modesty and the openness of mind which were the rare and beautiful setting of her powers.”

UNIVERSITY NOTES

THE LIBRARY

The Library has received during the past few weeks some valuable gifts. The most important of these is from the private library of a gentleman who has been a frequent benefactor to the University and the Library, of 387 books, in the main richly illustrated works in art, architecture, and natural history. A conservative estimate of the money value of these books shows them to be worth about \$6,000. Among them are Audubon's *Quadrupeds*, Sepp's *Nederlandsche insekten*, Gould's *Humming birds*, Levaillant's *Oiseaux d'Afrique*, and numerous other beautifully illustrated works in natural history, many of them colored by hand, together with Catlin's *American Indians* (a hand-colored copy), Schoolcraft's

Indians, Pennant's archæological and zoölogical works, Granger's *Biographical history of England* (with the addition of two thousand or more rare and valuable portraits). Other gifts of interest are a collection of books on the Baltic provinces and Livonia, from the estate of the late Dr. Hermann Guleke, and a number of books on Frisia, including most of the publications of the *Friesch genootschap van geschied- oudheid- en talkunde*.

The additions to the Library for the current year will fall far short of the usual average by reason of the greatly reduced funds available for the purchase of books. Opportunity has thus been afforded to catalogue a large body of bound volumes of pamphlets which had belonged to the library, some of them for many years, and also to arrange and bind the more important and valuable pamphlets hitherto unclassified.

An interesting find was recently made in an old volume of pamphlets thus being catalogued. This was a copy of the first work issued in English treating of New York and Manhattan Island, Denton's *A brief description of New York, formerly called New-Netherlands*, a little pamphlet of twenty-one pages, issued in London in 1670. This is one of the scarcest pieces of early Americana, and was spoken of by the bibliographies two hundred years ago as "Liber rarissimus." Its market value is about \$750. The copy thus found is of unusual size and excellence, and contains on the title page the date, which in most copies has been cut off by binders. This tract was reproduced in 1845 by Gowans as the first number of his *Bibliotheca americana*. At that time Mr. Gowans knew of but two copies in this country, but the interest in early American history which has since been developed has called forth several other copies, which are now in libraries and private collections.

By the instructions of the President, in accordance with the recommendations of the Library Council, the Library will be closed from June 12th, until it is reopened at the new site. It is deemed important that the Library should avail itself of the opportunity afforded by removal to make a complete inventory of the books in the Library. Due notice of the re-opening will be given in the public press and elsewhere.

FACULTY OF APPLIED SCIENCE

A prize of one hundred dollars has been offered by Mr. W. B. Devereux (School of Mines, '78) to graduates of the School of

Mines for the best memoir on the electric transmission of power for mining purposes. The memoir should describe in detail, with the necessary drawings, an existing plant or plants, and the practical results obtained therefrom, giving, if possible, the cost of installation and working. Preference will be given to memoirs describing plants with which the writer has had personal connection either in the design, the construction, or the operation of the same. Memoirs must be handed in to the Dean of the Faculty on or before December 1, 1897.

The Mineralogical Collection, now containing nearly thirty thousand specimens, and hitherto arranged in a semi-economic order throughout, was formed solely for the use of the students in engineering and chemistry. The rearrangement at the new site will be as follows:

(1) A systematic collection, composed of the specimens of each obtainable species which best illustrate the physical and chemical characters of the species. The order chosen may be called Groth modified by Dana, and the proportionate space allotted to each group will conform to the average of three of the great collections of the world.

(2) An economic collection of ores, building materials, and minerals used in chemical industries, in which especial attention will be paid to the ordinary crystals and masses, and to localities. The order adopted is that of the text-book used in the engineering and chemical courses.

(3) An introductory collection, illustrating history and characters.

(4) A dynamic collection, illustrating the genesis and alteration of minerals.

Two new undergraduate courses in Mineralogy have been started. One, offered in the College, is an introductory course preparatory to work under the Faculty of Pure Science. The other, a course in physical crystallography, is to be given in the fourth year to students in organic chemistry. In connection with these there is now appearing in the *School of Mines Quarterly* a series of articles on the characters of crystals.

FACULTY OF PHILOSOPHY

Each year the Faculty of Philosophy draws students from a wider extent of territory, and from a larger number of colleges and universities. This year, for example, no fewer than forty candidates for university degrees were examined by the Faculty. Eight of

these, including one woman, were candidates for the degree of Doctor of Philosophy. They had received preliminary education at the following institutions: Toronto University, 2; Prussian Gymnasium, 1; University of Munich, 1; Columbia, Yale, University of Minnesota, and Wellesley College, 1 each. The thirty-two candidates for the degree of Master of Arts, of whom 7 were women, came from the following colleges: Columbia, 7; Vassar, 3; and Wilberforce University, Queen's College (Belfast), University of Vermont, Swarthmore, Wesleyan, Yale, Lafayette, Barnard, Wycliffe (Toronto), Prussian Gymnasium, St. Augustine's College (Canterbury), Oregon University, Wellesley, University of Kansas, College of the City of New York, Hiram, Western Reserve University, Trinity University (Texas), Ohio State University, Harvard, Smith, and Oberlin, 1 each.

At the meeting of the American Oriental Society held in Baltimore on April 22, Professor Gottheil read the following papers: *Persian influences in Arabia* and *Note on Dr. Torrey's article in the Journal of the Society*, xviii, 176. Professor Gottheil also presented a preliminary card catalogue of all Oriental manuscripts in United States. At the same meeting the Rev. Mr. Robert J. Lau, an advanced student in the Department of Oriental Languages, read a paper on *Some Babylonian temple records in the Library of Columbia University*.

FACULTY OF POLITICAL SCIENCE

Thirteen graduate students have applied for examination under this Faculty for the degree of Ph.D., and thirty-one for the degree of M.A. The titles of dissertation for the degrees of Ph.D. are as follows: Factory laws and inspection in the United States; Recent centralizing tendencies in state educational administration; Sympathetic strikes; Rhode Island and the Federal Union, 1765-90; An analysis of agricultural discontent in the United States; The origin of the French republic; The abolition of privateering and the Declaration of Paris; Fresh air charity in the United States; The growth of cities in the nineteenth century; English local government of to-day; History of location in Iowa. There were sixty-three applications for fellowships in the subjects taught in the School of Political Science. Eight of the applicants were appointed.

Dr. W. Z. Ripley is publishing in the *Popular Science Monthly* an interesting series of illustrated articles on the racial geography of Europe.

The following records of publications for 1896 were omitted from the last number of the BULLETIN :

- DUNNING, Prof. Wm. A. Bodin on sovereignty. *Political Science Quarterly*, vol. 11, pp. 82-104.—Record of political events. *Ibid.*, vol. 12, pp. 365-396 and 764-788.—La vie politique et parlementaire aux États Unis. *Revue Politique et Parlementaire*, vol. 8, pp. 427-442, and vol. 10, pp. 445-455.—Michel's Idée de l'Etat (Review). *Political Science Quarterly*, vol. 11, pp. 734-738.—Rousseau's Contrat social, édition Dreyfus-Brissac (Review). *Ibid.*, vol. 11, pp. 165-167.—Willoughby's Nature of the state (Review). *Ibid.*, vol. 11, pp. 545-548.—Scott's History of the reconstruction (Review). *American Historical Review*, vol. 1, pp. 750-752.
- MOORE, Prof. J. B. American notes to Dicey's Conflict of laws. Boston, The Boston Book Co.—Historical notes on international arbitration. Report of the American conference on international arbitration, at Washington, April 22-23, 1896. Pp. 169-218.—International arbitration. *The New World*, June.—The question of Cuban belligerency. *The Forum*, May.—The Monroe doctrine. *Political Science Quarterly*, vol. 2, pp. 1-29.—The relations between the United States and Great Britain. *The National Review*, July.—Benedetti's Studies in diplomacy (Review). *American Historical Review*, vol. 1, p. 730.

FACULTY OF PURE SCIENCE

Department of Botany.—Three students from the Department of Botany are expecting to receive the doctor's degree at Commencement: Mr. Schneider, whose work was completed in 1895-96, but whose thesis was not published because of various delays in preparing the plates; Mr. A. J. Grout, whose thesis will be published in the Memoirs of the Torrey Botanical Club; and Mr. A. A. Tyler, whose thesis is being printed in the *Annals of the New York Academy of Sciences*.

Professor Underwood expects to spend the greater part of the summer in the herbaria at Kew and Paris, examining types of American plants in two diverse groups, fungi and ferns. The Berkeley collection of fungi at the former place, though rich in American species collected by the earlier mycologists (1835-1875), has never been examined by American monographers. Much confusion has resulted from a lack of definite knowledge of Berkeley's types, for his descriptions were meagre and very imperfect. It is hoped that an examination and redescription of these types in certain groups will give a clearer knowledge of our fungous flora.

The Department of Botany has recently received a valuable gift from President Low, consisting of the entire series of water colors and pen-drawings prepared by the late Mr. Hamilton Gibson for his work on *Edible toadstools and mushrooms*. These form

highly artistic, as well as authentic, representations of a considerable number of the common edible fungi. The illustrations, when properly framed, will be placed on the walls of the new laboratory.

In order that the Herbarium should not be twice moved, it has been decided to leave it in its present quarters until its final removal to the Botanical Garden. Such courses in the graduate work as involve taxonomic work among the higher plants will be continued next year at the present herbarium room. Since the working force of the herbarium has been insufficient to keep up the proper mounting of the plants at the same pace as the accessions, a special provision has been made to complete this work during the coming summer, so that when the collection is transferred it will be ready at once for delivery in a working order. It is expected that the Ellis collection of fungi, belonging to the Botanical Garden, will be accessible for reference next October.

Department of Physics.—Professor Rood is engaged in studying the effects of variations of the total illumination in connection with his flicker process for measuring the luminosity of colored surfaces. During the Christmas vacation Professor Hallock measured the temperature of the earth 5,000 feet below its surface, at a locality near Pittsburg, Pa. Mr. Parker has published a systematic treatise on electrical measurements which will be used in connection with the laboratory courses. Mr. Curtis has completed an investigation on the use of uncorrected lenses in photography, which will immediately be published. Mr. Gordon offers a course on meteorology for the coming year.

At the reception of the New York Academy of Sciences, April 5th, Professor Rood exhibited photographs demonstrating the regular or specular reflection of the X-rays. Professor Hallock exhibited a piece of apparatus which illustrated the action of the Wheatstone bridge in accordance with hydraulic principles, and a new mechanism illustrating the resolutions of vibrations, both designed and constructed by himself. Mr. Trowbridge exhibited models of a new X-ray detector which he has invented and constructed.

Department of Zoölogy.—A second Columbia Zoölogical Expedition to the west coast has been organized for the present summer, and it is hoped that sufficient funds may be raised to enable the party to leave by June first. A party consisting of Messrs. Harrington, MacGregor, Griffin, and Keppel, under the leadership of Mr. Calkins, will first proceed to Port Townsend, on Puget Sound, where they will be joined by Professor Wilson, by Professor Lloyd

of Teachers College, and probably one or two others. Later in the summer a division of the party will go on to Alaska for the purpose of making a zoölogical reconnaissance of the waters in the region of Sitka, of which almost nothing is known beyond the fact that it is extremely rich in rare and interesting forms of life.

An important part of the year's work has been the study and reports upon the results of last summer's expedition to the west coast. Several papers setting forth these results have been read before the Academy of Science and the American Society of Naturalists by Messrs. Dean, Calkins, Harrington, Griffin, and Crampton, and others are in preparation. Among the more interesting of these investigations may be mentioned those of Dr. Dean on the embryology of the primitive fishes *Bdellostoma* and *Chimæra*, and of Mr. Harrington on the remarkable degenerate mollusk *Entoconcha*, whose occurrence in this country has been recorded for the first time.

Dr. Strong has continued his investigations on the nervous system of lower vertebrates. Professor C. Judson Herrick, of Dennison University, has been engaged in an important research on the cranial nerves of the teleost fishes, along the lines laid down by Dr. Strong in his studies on the Amphibia. Other original researches during the year have included: studies on fertilization and cell-division in echinoderms and annelids, by Professor Wilson; on cell-division in *Noctiluca* and other Protozoa, by Gary N. Calkins; the growth, fertilization, and division of the eggs in ascidians, by H. E. Crampton; on the grafting of insects and the artificial formation of twins, by H. E. Crampton; the histology, physiology, and development of the lime-glands, by N. R. Harrington; the formation of the spermatozoa in Amphibia, by J. H. MacGregor; on the general mitotic phenomena in the eggs of geophyreans, by B. B. Griffin; on spermatogenesis in insects, by F. C. Paulmier; the early embryology of the cat-fish, by F. B. Sumner; the development of the cormorant, by A. E. Anderson. The results of several of the above have been presented in abstract to the Academy of Sciences.

Professor Osborn will pass a part of the summer in the exploration of newly opened beds of fossils in Colorado, Wyoming, and Kansas. Professor Dean will work in Munich on certain problems of vertebrate embryology and will attend the international congress of geologists at St. Petersburg. Dr. Strong and Mr. Crampton will, as usual, be engaged in research and instruction at the Wood's Holl biological station.

UNIVERSITY FELLOWSHIPS AND SCHOLARSHIPS

The University Fellowships for 1897-98 were awarded as follows:

James Loring Arnold, Columbia College, A.B., 1891. *English*.

William Maxwell Burke, Oberlin College, A.B., 1896; candidate for A.M., 1897. *Political Economy*.

Victor Seldon Clark, University of Minnesota, B.L., 1890. *Latin*.

Joseph Germain Charles Cottier, Stevens Institute of Technology, M.E., 1894; Columbia University, A.M., 1896; University Fellow in Mechanics, 1896-97. *Mechanics*.

John Archibald Fairlie, Harvard College, A.B., 1895; A.M., 1896. *Administration*.

John Driscoll Fitz-Gerald, Jr., Columbia College, A.B., 1895. *Romance Languages*.

George Tobias Flom, University of Wisconsin, B.L., 1893; Vanderbilt University, A.M., 1894. *German*.

Arthur Hillyer Ford, University of Wisconsin, B.S., 1895; E.E., 1896. *Electrical Engineering*.

Louis Herbert Gray, Princeton College, A.B., 1897. *Indo-Iranian Languages*.

Nathan Russell Harrington, Williams College, A.B., 1893; A.M., 1895; Columbia University, Assistant in Zoölogy, 1896-97. *Zoölogy*.

Marshall Avery Howe, University of Vermont, Ph.B., 1890; University of California, Instructor in Botany, 1891-96; Columbia University, University Scholar in Botany, 1896-97. *Botany*.

John Duer Irving, Columbia College, A.B., 1896; graduate student at Columbia University, 1896-97. *Geology*.

Allen Johnson, Amherst College, A.B., 1892; A.M., 1895; University of Leipzig, 1895-97. *European History*.

Adam Leroy Jones, Williams College, A.B., 1895. *Philosophy*.

Edward Kasner, College of the City of New York, B.S., 1896; Columbia University, candidate for A.M., 1897. *Mathematics*.

Alexander von Wolffersdorff Leslie, Harvard College, A.B., 1894; Lincoln University, Ill., A.M., 1895. *Literature*.

John Alexander Mathews, Washington and Jefferson College, B.S., 1893; M.S., 1896; Columbia University, A.M., 1895; Assistant in Assaying, 1896-97. *Chemistry*.

Charles Edward Merriam, Jr., Lenox College, Ia., A.B., 1893; Iowa State University, A.B., 1895. *Political Philosophy*.

H. C. Metcalf, Harvard College, A.B., 1894; University of Berlin, 1894-95, 1896-97; University of Paris, 1895-96. *Finance*.

William August Schaper, University of Wisconsin, B.L., 1895; Columbia University, University Scholar in Sociology, 1896-97. *Sociology*.

Frank Schlesinger, College of the City of New York, B.S., 1890; Columbia University, University Fellow in Astronomy, 1896-97. *Astronomy*.

Clement Moore Lacey Sites, Ohio Wesleyan University, A.B., 1887; A.M., 1890; Columbian University, LL.B., 1890. *Constitutional Law*.

Edward Lee Thorndike, Wesleyan University, A.B., 1895; Harvard College, A.B., 1896; Harvard University, candidate for A.M., 1897. *Psychology*.

*Robert Harvey Whitten, University of Michigan, B.L., 1896; University of Chicago, 1896-97. *Administration*.

The alternates for 1897-98 were named as follows:

IN THE FACULTY OF PHILOSOPHY

1. Lee Maltbie Dean, Yale University, A.B., 1896. *Sanskrit*.
2. Frederick Leslie Wharff, University of California, Ph.B., 1890. *German*.
3. George Balthasar Germann, Columbia College, A.B., 1895; New York University, Master of Pedagogy, 1894. *Education*.
4. Hugh Henry Herdman, Jr., Wabash College, A.B., 1896. *Literature*.

IN THE FACULTY OF POLITICAL SCIENCE

1. John Howard Dynes, Adelbert College, A.B., 1891; Western Reserve University, 1894-95; Harvard University, 1895-96; Columbia University, 1896-97. *Sociology*.
2. George Frederick Frost, Brown University, A.B., 1896; candidate for A.M., 1897. *History*.
3. John Randolph Neal, University of Tennessee, A.B., 1893; Vanderbilt University, A.M., 1895; LL.B., 1896; Columbia University, 1896-97. *Political Science*.

IN THE FACULTY OF PURE AND APPLIED SCIENCE

1. Alexander James Campbell, Yale University, Ph.B., 1893; University of California, 1896; Columbia University, candidate for E.M., 1897. *Mining Engineering*.

*Appointed from the Alternates by the President.

2. Elmer Ottis Wooton, Earlham College, B.S., 1889; A.M., 1896; Columbia University, University Scholar in Botany, 1896-97. *Botany*.

3. Walter Coluzzi Kretz, Columbia College, A.B., 1896; Columbia University, University Scholar in Astronomy, 1896-97. *Astronomy*.

4. Wilber Dwight Engle, Albion College, A.B., 1893; A.M., 1894; University of Denver, Professor of Chemistry, 1895-97. *Chemistry*.

The following have been appointed University Fellows for 1897-8, without emolument:

Anselm Vinet Hiester, Lebanon Valley College, B.S., 1887; Franklin and Marshall College, A.B., 1889. *Sociology*.

William Herbert King, Massachusetts Institute of Technology, B.S., 1894; Harvard College, A.B., 1896. *Public Law*.

Leonard Beecher McWhood, Columbia College, A.B., 1893. *Psychology*.

The total number of applications received was 177. Of these, 66 were in the Faculty of Philosophy, 64 (of which number 1 was withdrawn) in the Faculty of Political Science, 31 in the Faculty of Pure Science, and 4 in the Faculty of Applied Science.

The twenty-four Fellows appointed are widely distributed among the various educational institutions of the country. The following fifteen institutions are represented in the list: Harvard, 4; Columbia, 3; Williams, 3; University of Wisconsin, 2; College of the City of New York, 2; and Oberlin, Stevens Institute, Princeton, Amherst, Washington and Jefferson, Ohio Wesleyan, Lenox (Ia.), and the Universities of Minnesota, Vermont, and Texas, 1 each.

The President's University Scholarships and the University Scholarships have been assigned as follows:

PRESIDENT'S UNIVERSITY SCHOLARSHIPS

John Howard Dynes, Adelbert College, A.B., 1891; Harvard University, graduate student, 1895-6; Columbia University, graduate student, 1896-7. *Sociology*.

Corliss Fitz-Randolph, Alfred University, A.B., 1888; Columbia University, graduate student, 1896-7. *Latin*.

James Paddock Taylor, Colgate University, A.B., 1895; Harvard University, graduate student, 1896-7. *Education*.

Elmer Ottis Wooton, Earlham College, Ind., B.S., 1889; Columbia University, graduate student, 1896-7. *Botany*.

UNIVERSITY SCHOLARSHIPS

Allan Perlee Ball, Amherst College, A.B., 1892, and A.M., 1895. *Economics*.

George Sheldon Bowman, Roanoke College, A.B., 1894. *Jurisprudence*.

Frank Hoag Brooks, Columbia College, candidate for A.B., 1897. *Greek*.

Barnum Brown, Kansas State University, candidate for A.B., 1897. *Zoölogy*.

Will Grant Chambers, Lafayette College, A.B., 1894. *Psychology*.

William Bernard Cutright, University of West Virginia, A.B., 1895. *Economics*.

John Allen De Cou, Haverford College, A.B., 1894; Harvard University, A.B., 1895. *Romance Philology*.

Wilber Dwight Engle, Albion College, A.B., 1893; A.M., 1894. *Chemistry*.

Hugh Henry Herdman, Jr., Wabash College, A.B., 1896. *Literature*.

Benjamin Felix Hill, University of Texas, B.S., 1896; University of Texas, candidate for M.S., 1897. *Geology*.

Olin Wesley Hill, Wesleyan University, A.B., 1896. *Political Science*.

Samuel Carlisle Johnston, Colgate University, A.B., 1884, and A.M., 1887; Columbia University, graduate student, 1896-7. *Greek*.

Walter Coluzzi Kretz, Columbia College, A.B., 1896; Columbia University, graduate student, 1896-7. *Astronomy*.

Charles Kuntz, University of Vienna, 1891-2; University of Zurich, 1892-3; Columbia University, graduate student, 1896-7. *Psychology*.

Roswell C. McCrea, Haverford College, candidate for A.B., 1897. *Political Science*.

Theophilus John Moll, DePauw University, Ph.B., 1893, and LL.B., 1894; Cornell University, LL.M., 1896. *Constitutional Law*.

William Arthur Dunlop Moore, Yale University, A.B., 1895. *Constitutional Law*.

John Randolph Neal, University of Tennessee, A.B., 1893; Vanderbilt University, A.M., 1895, and LL.B., 1896; Columbia University, graduate student, 1896-7. *Political Science*.

Francis Reid North, Wesleyan University, candidate for A.B., 1897. *History*.

James Roy Perry, University of Toronto, A.B., 1896. *History*.

William Popper, Columbia College, A.B., 1896; Columbia University, graduate student, 1896-7. *Semitic Languages*.

Frederic Newton Raymond, University of Kansas, A.B., 1896; Columbia University, graduate student, 1896-7. *Literature*.

Albert Granberry Reed, Vanderbilt University, A.B., 1895; Yale University, graduate student, 1896-7. *English*.

Arthur Frank Joseph Remy, College of the City of New York, A.B., 1890; Columbia University, graduate student, 1896-7. *Comparative Philology*.

Hadley D. Vicars Ross, Dalhousie College, A.B., 1893; Harvard College, A.B., 1895. *Literature*.

Edward Barker Scoggan, Amity College (Ia.), A.B., 1896; University of Illinois, candidate for A.M., 1897. *Philosophy*.

Francis Bertody Sumner, University of Minnesota, B.S., 1894; Columbia University, graduate student, 1896-7. *Zoölogy*.

Edwin Platt Tanner, Columbia College, candidate for A.B., 1897. *History*.

Rudolf Tombo, Jr., College of the City of New York, B.S., 1895. *German*.

William Morrow Washington, Centre College (Kentucky), B.S., 1895; Columbia University, graduate student, 1896-7. *Philosophy*.

The total number of applications received was 86. Of these, 44 were in the Faculty of Philosophy, 26 in the Faculty of Political Science, and 16 in the Faculty of Pure Science.

The distribution of the applications among the various departments was as follows:

Philosophy: Philosophy and Education, 14; Latin, 5; English, 4; Literature, 4; German, 3; Greek, 3; Romance Languages, 3; Comparative Philology, 2; Semitic Languages, 2; Psychology, 2; Anthropology, 1; Music, 1. Total, 44.

Political Science: Political Science, 14; History, 7; Economics, 5. Total, 26.

Pure Science: Chemistry, 4; Biology, 3; Botany, 2; Geology, 2; Mathematics, 2; Astronomy, 1; Mechanics, 1; Metallurgy (not eligible), 1. Total, 16.

SUMMARIES OF UNIVERSITY LEGISLATION

UNIVERSITY COUNCIL. MARCH MEETING

At the meeting of the University Council held March 16, 1897, the following action was taken:

The President suggested that the Council adopt one form of expression to be used to designate the two parts into which the academic year is divided. On motion, it was voted that the expressions "first half-year and second half-year" be recommended by the Council.

Charles Ernest Chadsey, M.A., was recommended to the President for the degree of Doctor of Philosophy. Major subjects: American History. Minor subjects: European History; Political Science and Finance. Subject of Dissertation: The Struggle between President Johnson and Congress over Reconstruction.

The appointment of Heinrich Ries, Ph.D., as Barnard Fellow for the year 1897-98, was confirmed.

UNIVERSITY COUNCIL. APRIL MEETING

At the meeting of the University Council held April 20, 1897, the following action was taken:

The President reported the resignation of W. W. Cook as John Tyndal fellow.

Hugo Randau, S.T.B., of the General Theological Seminary, was recommended for the degree of Master of Arts. Major subject: Semitic Languages and Literatures. Minor subjects: Arabic; Iranian. Subject of essay: Cuneiform Texts in General Theological Seminary, edited, transcribed, and translated.

Ralph Lionel Brydges was recommended for the degree of Master of Arts. Major subject: Philosophy. Minor subjects: German; Linguistics. Subject of essay: Berkeley's Theory of Vision: How far its conclusions have influenced and been adopted by modern psychology.

Resolved, That on the new site the bells be rung at the half hour and twenty minutes past the hour.

Resolved, further, that at the new site, lectures shall begin on the half hour and continue fifty minutes only, except in the School of Law.

Resolved, That at the new site, the record of the assignment of rooms be kept by the Bursar, and for any new assignment application be made to the Bursar.

Resolved, further, that the assignments shall be made by the Bursar subject to the approval of the President.

THE TRUSTEES. APRIL MEETING

At the meeting of the Trustees held April 5th, the President reported gifts from Professor James F. Kemp of a collection of minerals and microscopic slides; from the estate of Dr. Herman F. Guleke of a valuable collection of books on the Livonian and Baltic Provinces, and from Mr. Charles H. Senff of over three hundred handsomely bound and illustrated volumes. The President was authorized to close the Library on the present site from and after June 12th, preparatory to removal. It was determined to subdivide the Department of Mineralogy and Metallurgy as heretofore constituted, and to create a Department of Mineralogy and a Department of Metallurgy. Dr. Alfred J. Moses was appointed professor of Mineralogy, and Mr. Henry M. Howe, professor of Metallurgy. It was voted to discontinue the professorship of Medical Jurisprudence in the Law School now held by Professor Ordranax. A handsomely engrossed communication was received from Princeton University acknowledging the congratulatory address sent by the Trustees of Columbia, together with a Princeton sesqui-centennial medal.

THE TRUSTEES. MAY MEETING

At the meeting of the Trustees held May 3d, the budget for the ensuing fiscal year was considered and adopted. The President reported for the Committee on Buildings and Grounds, that since the termination of the strike the new buildings had progressed satisfactorily, and that unless unforeseen causes prevented the rooms in the Library necessary for the early removal of books would be ready for shelving by June 15; the museums in Schermerhorn Hall by July 1st; and the laboratories in Havemeyer Hall shortly after that date; also, that it seemed probable that the Physics Building would be entirely finished by July 1st, and the Engineering Building about August 1st. The Committee also submitted a detailed report on the furniture for various buildings. A letter was received from the Secretary of the Class of '82, stating that the Class desired to present to the College a wrought-iron gate of a design prepared by Messrs. McKim, Mead, and White, to be placed at the 120th Street entrance; and the gift was accepted with a vote of thanks. The President also reported gifts from Mr. John

J. Hopper and Mrs. Margaret B. Edson. A letter was received from Mrs. Elizabeth Mary Ludlow, the founder of the Robert Center Fund for Instruction in Music, tendering a deed of twelve lots of land in Brooklyn, as an addition to the endowment. A vote of thanks was also passed to the subscribers to the fund raised by Dr. B. D. Woodward to meet the expenses of the lectures delivered by Professor Brunetière. Amendments to the Statutes were adopted providing for the H. C. Bunner Gold Medal, and changing the section relating to meetings of the University Council, to provide for quarterly instead of monthly meetings. The President was authorized to enter into an agreement with Teachers College for the use of the machine shops of that College by students of the School of Mechanical Engineering. Upon the recommendation of the Faculty of the College of Physicians and Surgeons, the title of the chair of Chemistry and Medical Jurisprudence was changed to that of Physiological Chemistry, and the title of the Department of Chemistry and Physics in the College of Physicians and Surgeons was changed to that of Department of Physiological Chemistry. The title of Professor Fiske was changed from Adjunct Professor to Professor.

UNIVERSITY PUBLICATIONS

For purposes of record and information there is published in each number of the BULLETIN a complete list of the recent issues of the various serial Studies and Contributions issued from the University.

STUDIES IN HISTORY, ECONOMICS, AND PUBLIC LAW

[Edited by the Faculty of Political Science]

VOLUME VIII

1. The Struggle between President Johnson and Congress over Reconstruction. By Charles Ernest Chadsey, Ph.D. Price, \$1.00.
2. Recent Centralizing Tendencies in State Educational Administration. By William Clarence Webster, Ph.D. Price, 75c.
3. The Abolition of Privateering and the Declaration of Paris. By Francis R. Stark, LL.B., Ph.D. Price, \$1.00.
4. (To be announced shortly.)

VOLUME IX

1. English Local Government of To-day. A Study of the Relations of Central and Local Government. By Milo Roy Maltbie, Ph.D. Price, \$1.50.

For further particulars apply to Professor Edwin R. A. Seligman, Columbia University, or to The Macmillan Co., New York City.

CONTRIBUTIONS TO PHILOSOPHY, PSYCHOLOGY, AND EDUCATION

The Columbia University Contributions to Philosophy, Psychology, and Education are issued under the editorship of the officers of the Department, and appear at irregular intervals. They are published for the Department by The Macmillan Co., New York City, to whom inquiries and orders should be directed.

5. Hegel's Doctrine of the Will. By John Angus MacVannel. Sometime University Fellow in Philosophy in Columbia College, June, 1897. \$1.00.

CONTRIBUTIONS FROM THE OBSERVATORY.

Nos. 10 and 11. On the Reduction of Stellar Photographs, with special Reference to the Astro-photographic Catalogue Plates. On the Permanence of the Rutherford Photographic Plates. By Harold Jacoby.

CONTRIBUTIONS FROM THE GEOLOGICAL DEPARTMENT.

VOLUME V

No. 37

1. The Stratigraphical Relations of the Brown's Park Beds of Utah. John Duer Irving. Trans. N. Y. Acad. Sci. xv (Sept. 25, 1896) 252-259; Pl. xviii.

2. The Glacial or Post-Glacial Diversion of the Bronx River from its Old Channel. J. F. Kemp. Trans. N. Y. Acad. Sci. xvi (Jan. 22, 1897) 18-24; illust. in text.

3. Notes on the Eclogite of the Bavarian Fichtelgebirge. David H. Newland. Trans. N. Y. Acad. Sci. xvi (Jan. 22, 1897) 24-29.

No. 38

1. On the Vertebral Column, Fins, and Ventral Armoring of Dinichthys. Bashford Dean. Trans. N. Y. Acad. Sci. xv (June 2, 1896) 157-163. Pl. vii, viii.

2. Note on the Ventral Armoring of *Dinichthys*. Bashford Dean. Trans. N. Y. Acad. Sci. xvi (Jan. 25, 1897) 57-61; Pl. ii, iii.

3. On a New Species of *Edestus*, *E. Lecontei*, from Nevada. Bashford Dean. Trans. N. Y. Acad. Sci. xvi (Jan. 25, 1897) 61-69; Pl. iv, v.

No. 39

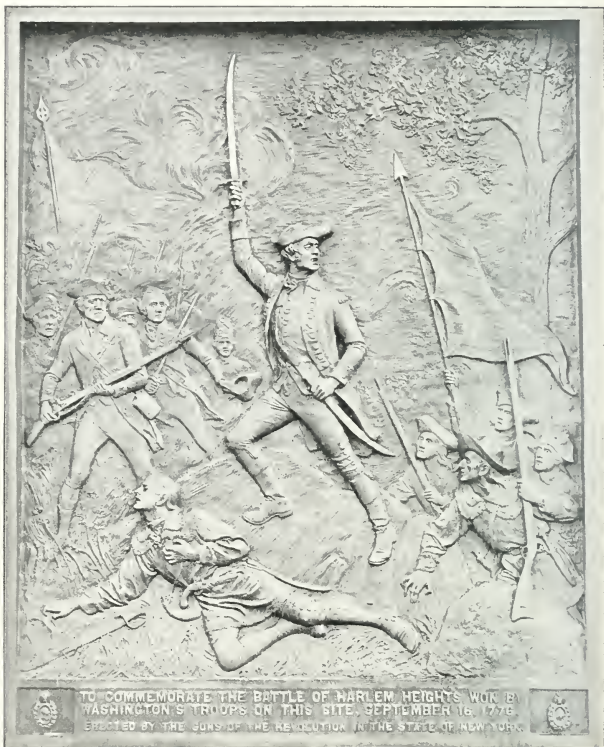
The Leucite Hills of Wyoming. J. F. Kemp. Bull. Geol. Soc. Am. viii (Feb. 25, 1897) 169-182; Pl. xiv and illust. in text.

No. 40

The Geology of the Magnetites near Port Henry, N. Y., and especially Those of Mineville. J. F. Kemp. Trans. Am. Inst. Min. Eng., Chicago Meeting, Feb. 1897, Reprint pp. 1-58; Pl. i.-xi, and illust. in text.

No. 41

The Cretaceous Clay Marl Exposure at Cliffwood, N. J. Arthur Hollick. Trans. N. Y. Acad. Sci. xvi (March 26, 1897) 124-136; Pl. xi-xiv, and illust. in text.



TO COMMEMORATE THE BATTLE OF HARLEM HEIGHTS WON BY
WASHINGTON'S TROOPS ON THIS SITE, SEPTEMBER 16, 1776.
ERECTED BY THE SONS OF THE REVOLUTION IN THE STATE OF NEW YORK.

COLUMBIA

UNIVERSITY BULLETIN

DECEMBER, 1897

XVIII

THE BATTLE OF HARLEM HEIGHTS

The ground on which Harvard and Princeton stand has been made in a peculiar sense sacred by the stirring events which occurred on it or in its immediate vicinity during the War for American Independence. The centre of the American camp during the siege of Boston was in close proximity to the site of the college at Cambridge. A part of the British troops who were attacked by Washington on the morning of January 3, 1777, were driven across the college grounds at Princeton. The height on which Columbia has found her permanent home was also the scene of a conflict which reflected no little credit on American valor. If Mercer fell at Princeton, Knowlton and Leitch fell on Harlem Heights. If American successes at Trenton and Princeton revived a courage which had been almost destroyed by the loss of New York and the retreat through the Jerseys, the spirited attack on the British at Harlem Heights in a measure atoned for the panic at Kip's Bay and nerved the Americans to meet their foe at White Plains. The establishment of the fact that this battle occurred on almost the very spot where the new buildings of the University stand, and the public recognition of this fact by the placing of a tablet on Engineering Hall, are events which at this time have a peculiar interest for Columbia and her friends.

Previous to 1878 the opinion had prevailed among students to whom the best contemporary accounts of the event were accessible, that the scene of the Battle of Harlem Heights was below the "Hollow Way" at Manhattanville. But in that year Erastus C. Benedict, Esq., read before the New York Historical Society a paper in which he sought to locate the encounter above 130th Street, and on what is now known as Washington Heights. He contended that the name Harlem Heights was confined exclusively to the northernmost plateau on Manhattan Island, and he so interpreted the authorities as to make it appear that the battle was fought in that region. This involved the necessity of locating the British camp on Morningside Heights. Also, since the American lines were known and admitted to have extended as far south as the brow of the hill above 130th Street, it involved the further necessity of locating the battlefield within the American position. He in fact sought to show that the principal conflict occurred on and near the site of Trinity Cemetery, between 155th and 158th Streets. If that were true, then a body of some four hundred British light infantrymen drove Knowlton's Rangers far within the lines where were posted nine thousand American troops: "they fought at times within four blocks of his (Washington's) headquarters, made the circuit of his strong position, and thus returned to Morningside Heights, carrying all their guns and wounded with them, and losing but fourteen men killed." While these events were in progress, at least two divisions of the American army were throwing up defences on the line of 147th Street, and apparently took no notice either of the British vanguard or of the reinforcements which were sent to support it. Mrs. Martha J. Lamb adopted Mr. Benedict's view of the location of the battlefield, and by introducing it into her *History of the City of New York* gave it greater currency than it might otherwise have obtained.

Professor Henry P. Johnston, of the College of the City of New York, in his volume entitled *The Battle of Harlem Heights*, which has recently been published for the Columbia

University Press by the Macmillan Company, has conclusively shown, by a thorough and critical examination of all accessible authorities, that Morningside Heights and not Washington Heights were the scene of the conflict of September 16, 1776. He has thus, in general, confirmed the view previously expressed by Henry B. Dawson and by the Hon. John Jay; though he has been able, with the aid, in part, of material collected by Mr. William Kelby, to fix the principal scene of the battle west, instead of east, of the Boulevard.

The argument by which Professor Johnston has been able to support his position runs substantially as follows. All writers are agreed that on September 16th Washington's headquarters were at the Roger Morris house on the east side of Washington Heights, near 161st Street, and that the American troops were stationed between that point and the top of the hill above 130th Street. But the location of the British camp has been in dispute. Professor Johnston, however, has been able to show that General Howe's headquarters were at the Beekman Mansion, 51st Street and First Avenue, and that the British troops, on the morning of the 16th, lay below 100th Street, with no pickets above 105th Street. At an early hour Knowlton's Rangers were ordered by Washington to reconnoitre that position. They advanced as far south as Jones' house, at 106th Street, west of the Boulevard. The identification of this site furnishes an important link in the evidence, for it was here that the fighting of the day began. The Rangers fell back before the advance of a body of British light infantry, skirmishing as they went, till they reached the "Hollow Way." There Washington attempted to capture the British force, which had followed the Americans so far, by attacking them in front in such a way as to attract them down to the low ground, near 125th Street, while he sent a detachment around their right flank for the purpose of reaching their rear. To Knowlton and Leitch was intrusted the execution of the latter part of the plan. While the attention of the British was kept occupied by a brisk fire in front, the flanking party made a detour to the

east; but, instead of reaching the enemy's rear, by a mistake they approached his flank, near 124th Street and the Boulevard. There both Knowlton and Leitch fell. The Americans continued the attack, however, with such vigor that Washington sent reinforcements, and the British were forced to retreat to a buckwheat field which was located west of the Boulevard and just south of Barnard College. There, supported by reinforcements, the British made a stand. A sharp conflict, lasting for two hours, ensued, in which the British were again worsted and compelled to retire. The Americans pursued them to the vicinity of Jones' house, where, lest they might be overwhelmed by an advance of the whole British army, Washington ordered the fighting to cease and his troops to return to their position on Washington Heights.

For the determination of the site of the battlefield Professor Johnston relies chiefly upon the letters of General George Clinton, of General Howe, and of Stephen Kemble, the deputy adjutant-general of the British forces. The volume of Von Elking on the German auxiliaries has also furnished him with valuable material. All available information, historical and topographical, has been used, and that with evident fairness and good judgment.

On the afternoon of Saturday, October 16, 1897, the Sons of the Revolution, in token of what must now be the generally accepted belief, that the Battle of Harlem was fought on Morningside Heights, delivered to the custody of Columbia University a bronze tablet commemorative of that event. The artist who designed and executed the work is Mr. James Edward Kelly, of New York City. The scene of which he has given a spirited representation is the attack of the flanking party, led by Knowlton and Leitch, upon the British right near 124th Street and the Boulevard. Leitch has just fallen, and Knowlton is cheering on his men toward the spot where a few minutes later he, too, receives the fatal bullet. The west side of Engineering Hall was properly selected as the place for the location of the tablet, for that is the point of the Columbia grounds which is nearest to the wheat field where

occurred the chief conflict of the day, and to which the British were driven back very soon after Knowlton fell.

The exercises connected with the unveiling of the tablet were attended by the Sons of the Revolution, who were escorted by a regiment of United States soldiers and by the Old Guard of New York; by the President and Trustees of Columbia University; by his Honor, Mayor Strong; and by many guests, among whom were a number of descendants of Colonel Knowlton and others who fought with him in the battle. After prayer by Rev. Dr. Brockholst Morgan, Professor Johnston, on behalf of the Tablet Committee, of which he was chairman, presented the memorial to the Society. In his brief address he told how the place for the tablet had been selected, and spoke of the patriotic memories awakened by the place and the occasion. The tablet was then unveiled by Mr. Frank Bailey, a great-grandson of Colonel Thomas Knowlton. It was accepted from the committee and delivered to the custody of Columbia University by Mr. Frederick S. Tallmadge, President of the Sons of the Revolution. On behalf of Columbia it was accepted by President Low.

In the course of his address Mr. Low said: "It is with great happiness that, in behalf of the Trustees of Columbia University, I accept this tablet. It will perennially have a significance for passers-by, reminding them that it was here that our countrymen fought a brilliant and successful engagement in the War for Independence. But to us of Columbia it will not only be a reminder that the ground is hallowed by the blood of brave men, but it will also remind us of the part that the sons of our *Alma Mater* played in the struggle for liberty. The scholarly life of Columbia contributed to the success of that struggle, and our University, which went into the fight as King's College, came out as Columbia. I assure you that you could not commit your tablet to more loving or reverent hands than ours. We shall never look at it without deriving inspiration to serve well our day and generation."

Addresses appropriate to the occasion were also made by

Mayor Strong, Mr. Charlton T. Lewis, and by Professor William M. Sloane, of Columbia.

HERBERT L. OSGOOD

HISTORY OF ROWING AT COLUMBIA

The Columbia College Boat Club was formed in 1873. Its first president was Alexander B. Simonds, '73, and its first captain, Casimir deR. Moore, '73. The first crew to represent the College in the inter-collegiate regatta consisted of a six-oar, and was made up as follows :

		Class.	Age.	Height.	Weight.
Captain and Bow . . .	C. deR. Moore	'73	21	5.7	145
No. 2	O. D. Smith	'75	20	5.8	150
No. 3	A. B. Simonds	'73	19	5.9½	138
No. 4	E. S. Rapallo	'74	20	5.9	156
No. 5	R. C. Cornell	'74	20	5.11½	165
Stroke	B. F. Rees	'74	20	5.8	145

The time of training was about three months. The trainer was the professional oarsman, Hank Ward, and the boat was built by Fearon, of Yonkers.

The race was rowed at Springfield, Mass., on July 17, 1873, the course being three miles straightaway. The crew met with a serious misfortune through a collision with Amherst, just three days before the race, in which Mr. Rapallo was wounded in the side. Unfortunately, there was no substitute that year, and the crew was forced to remain idle during the last three days. Mr. Rapallo rowed most pluckily in the race, notwithstanding the fact that he came direct from his bed to the boat. In spite of this, and although the men were all in poor condition, they finished fourth among eleven other crews.

This was the year of the celebrated controversy over the diagonal line at the finish. The flags were first given to Harvard under the impression that she was first to cross the line, but the referee decided that Yale was first, Wesleyan second, Harvard third, and Williams last; he declined to

place the other crews. It was generally conceded, however, that Columbia finished just after Harvard and before Cornell.

In 1874 the crew was made up as follows:

		Class.	Age.	Height.	Weight.
Bow	P. T. Timpson	'77	22	5.11¼	158
No. 2	Jasper T. Goodwin	'76	23	5.11	158
No. 3	Gaspar Griswold	'77	18	6	159
No. 4	Edward S. Rapallo	'74	21	5.9	159
No. 5	Robert C. Cornell	'74	21	6	174
Captain and Stroke	B. Frank Rees	'74	20	5.8½	154
Substitute	Isaac N. Seligman	'76	19	5.3	154

That year the crew discarded the professional trainer, and were coached on the Harlem by Mr. George L. Rives, '68, from whom they first obtained an idea of the English stroke. On June 14 the crew left the Harlem and went to Saratoga, where the race was to be rowed. They were fortunate in securing excellent quarters and kept in perfect health throughout the season's training. The race was rowed on July 14, and Columbia secured a signal victory over eight contestants. The crews finished as follows: first, Columbia; second, Wesleyan; third, Harvard; fourth, Williams; fifth, Dartmouth; sixth, Cornell; seventh, Trinity; eighth, Princeton; ninth, Yale. The fastest time ever made over a three-mile course on slack water was made by this crew, the course being covered in 16 minutes, 42¼ seconds.

The next year (1875) saw only one of the old crew back in the boat. This man was J. T. Goodwin, of '76, and for four years he proved a pillar of strength and placed Columbia's rowing in the very front rank. With five new men, he formed a crew which came in second to Cornell in the intercollegiate race at Saratoga in 1875; and the same crew was third in 1876, beaten only by Cornell and Harvard.

In July, 1876, Columbia sent a four, consisting of Sage, Griswold, Boyd, and Goodwin, to compete in the Centennial race at Philadelphia. They rowed in the national and the intercollegiate races. There were twenty-eight crews in the national, and Columbia got into the final heat with Atlanta. The first trial resulted in a foul. In the second trial one of

our men fainted in the boat and Atlanta won. The very same crews came together again in the autumn of that year on the Harlem, and Columbia had the satisfaction of beating Atlanta by several lengths. In the international race at Philadelphia, the crew also won its way to the final heat, but was then compelled to withdraw on account of the sickness of one of the crew. Two days later, though still in no condition, they rowed in the intercollegiate, and finished second to Yale, defeating Trinity, of Cambridge, England, and following Yale over the line by less than a length.

In 1877 a crew made up as before, except that R. R. Colgate took Gaspar Griswold's place, entered every open regatta for senior fours and won them all. This crew never lost a race. There was no intercollegiate race that year, but Columbia rowed its first eight-oared race with Harvard at Springfield after only ten days of training. It was beaten by the celebrated Bancroft crew, but it made a better showing than did Yale against Harvard several days later. Sage, Edson, Ridabock, and Goodwin were in this crew, as also was Edmond Kelly, who coached them the next year, when as a four they won the great victory at Henley on the Thames.

It was in 1878 that Columbia sent this four to compete at Henley and there they won the visitors' cup, beating the best crews that Oxford and Cambridge could produce. This famous crew was made up as follows:

		Age.	Height.	Weight.
Bow	Edwin Sage	23	5.11 $\frac{3}{4}$	173
No. 2	Cyrus Edson	20	6	178
No. 3	Henry S. Ridabock	21	5.11 $\frac{1}{2}$	183
Stroke	Jasper T. Goodwin	28	5.10 $\frac{1}{4}$	162

They entered for the stewards' and visitors' cups, and their chance of winning the former was good, till in the very first heat they were fouled by the Dublin University crew. They were not allowed to row in the final, the Shoe-wae-cae-mettes objecting; and so all chance for that race was lost, not only to Columbia but to America, for London easily disposed of

the Shoe-wae-cae-mettes in the final heat. The event of the day turned out to be the second heat for the visitors' challenge cup. For this the University College crew of Oxford had the inside position, the Columbia College crew the middle, and the Jesus College crew of Cambridge the outside place. The last named crew was considered the best four on the river, and the writer knows that it was the only crew that our men feared. The race was intensely exciting and our boys passed the post two lengths ahead of Jesus College, with the Oxford boat a bad third. The race was rowed on the Fourth of July. At the final heat, rowed the next day, our crew easily disposed of Hertford College, Oxford, and so won a great race. Public sentiment at that time was well expressed in the following editorial notice taken from the *New York Herald* of that date:

"The victory of Columbia at Henley is one at which all American oarsmen will rejoice. Unable to get on a satisfactory race at home, she crossed the Atlantic, faced every student crew in Europe that dared meet her, gave them months of notice, so there should be no surprise, and the result is a superb triumph. She met them on their own most famous course. Among her opponents were graduates of years standing, a fact which would have rendered them ineligible with us, men culled with the greatest care from hundreds of good oarsmen, though she herself had hardly a dozen from whom to select, and she has rowed them all down; rowed them until one man fainted, and until the famous Oxford oarsmen actually ran into the bank. She has borne herself throughout in a way most creditable to us, winning hosts of friends, and in training, steering, coaching, rowing, and all that makes a race, proving herself superior to the best student oarsmen in Europe."

In 1879 and 1880 the club was represented chiefly in fours, and made a good record. Their best race was at Lake George, July 18, 1879, when they beat Wesleyan and Cornell. The crew consisted of Eldridge (who was substituted on the Henley crew), Van Sinderen, Muller, and Painter;

and they won the race in the remarkable time of 8 minutes and 26 seconds, the best on record for $1\frac{1}{2}$ miles on slack water. At the same place, the next year, Cornell won, while Columbia was second, and the University of Pennsylvania third.

In 1881 began the series of eight-oared races with Harvard, and Harvard won at New London by 13 seconds. In 1882 Columbia was awarded the race by the referee, Harvard failing to put in an appearance. At the close of the racing season in 1882, the Columbia eight-oared crews retired with an unbeaten record, and with more races to their credit than had been rowed by all the other colleges combined. To the University crew belonged the honor of having defeated the best eights the amateur clubs could produce at the Newark and Harlem regattas. After that they went to New London, and spent several weeks preparing for a race with Harvard, which never took place, and which was declared forfeited to Columbia by Mr. R. C. Watson, of Harvard, who was referee for the race. The Freshmen of the class of '85 also won a victory over the Harvard Freshmen in a race decided on the Harlem River.

In 1883 the blue and white were again in front at Newark, on Decoration Day, and also on the Harlem two days later. The former was no easy victory, as the University of Pennsylvania, which had long been anxious to meet Columbia, had specially prepared for a mile and a half race, the distance of the Newark course, while Columbia had been grinding away at four to six mile daily pulls. From first to last of the Newark race the boats were never clear of each other, and Columbia, which had always been in front, finally won by about a quarter of a length, the nose of the Pennsylvania boat being level with the bow oar of Columbia. On the Harlem, Columbia raced away from a metropolitan eight, the New York Athletic Club not coming to the scratch. J. A. B. Cowles was captain and stroke of this crew. On June 26 of that year, at New London, Harvard beat Columbia in 24 minutes, 45 seconds.

In 1884 Harvard beat Columbia by only five seconds, in 24 minutes and 31 seconds. In 1885 Harvard again won. The rowing season of 1886 opened on May 23 on the Harlem, when Columbia won the championship cup for eights, beating Atlanta by about four lengths. On June 24, at New London, Columbia beat the University of Pennsylvania by one-eighth of a mile in the very fast time of 20 minutes and 41 seconds, and on June 26 Columbia beat Harvard by about eight lengths. Columbia finished the season by winning the eight-oared race on the Harlem in the autumn, beating the New York Athletic Club and Nonpareil. The crew was made up as follows: Guy Richards, 155 pounds; R. Applegate, 167; C. A. Stevens, 162; W. A. Meikleham, Captain, 169; C. M. Donnelly, 175; S. Harris, 173; C. E. Beckwith, 168; B. Lockwood, Jr., 159.

In 1887 Harvard won by nine seconds, and both crews beat the record. Harvard finished in 20 minutes, 20 seconds. In 1888 there was no 'varsity race, and 1889 the first three-cornered race for three miles between Cornell, the University of Pennsylvania, and Columbia was rowed at New London. It resulted in a victory for Cornell by the narrow margin of four seconds, Columbia being second. In 1890 there was no 'varsity crew, and in 1891 Cornell again won over Columbia at New London. We had no 'varsity crews in 1892, 1893, and 1894. In 1895 began a new series of races between Cornell, the University of Pennsylvania, and Columbia, at Poughkeepsie. The first race was won very handily by Columbia; but the next year the crew was badly beaten by Cornell, the University of Pennsylvania, and by Harvard, which joined the Poughkeepsie race that year. The result of this year's races is fresh in the mind of every boating man. Columbia finished second to Cornell in both 'varsity and freshman races, but it was no disgrace to be beaten by such an exceptional crew as represented Cornell this year.

Columbia's record in freshman races is a creditable one:

DATE.	PLACE.	WINNER.	Time : Columbia	Time: Harvard.
1880	New London	Harvard	11m. 37s.	11m. 32s.
1881	Boston	Harvard	9m. 21 $\frac{3}{4}$ s.	9m. 5 $\frac{3}{4}$ s.
1882	Harlem	Columbia	10m. 56s.	11m. 10s.
1883	New London	Harvard	11m. 22s.	11m. 3s.
1884	New London	Columbia	9m. 43 $\frac{1}{2}$ s.†	9m. 54s.
1885	New London	Harvard	13m. 12s.	12m. 22s.
1886	New London*	Harvard	12m. 10s.	11m. 53s.
1887	New London	Columbia	11m. 13 $\frac{3}{4}$ s.	11m. 35s.
1888	New London	Columbia	11m. 54s.	12m. 8s.
1889	New London	Harvard	12m. 28s.	12m. 21s.

In 1890, at New London, the Columbia Freshmen rowed two races: on June 24, when they were beaten by both Cornell and Yale in a close race; on June 27, when they beat Harvard by 3 seconds. In 1891, on June 20, Columbia was beaten by Cornell by three lengths, but five days later won over Yale and Harvard, breaking the record. The time for the three crews was: Columbia, 9m. 41s.; Yale, 9m. 53 $\frac{1}{2}$ s.; Harvard, 9m. 56s. In 1892 the Freshmen went to Ithaca and were beaten there by Cornell on June 9. On July 1, at New London, Yale beat Columbia, and Columbia beat Harvard by 8 seconds. In 1893, at New London, on June 25, Yale won, Harvard was second, and Columbia third. In 1894, at New London, on June 28, Yale again won, Columbia was second, and Harvard was last. In 1895, at the same place, Yale was first, Harvard second, Columbia third. In 1896, Columbia rowed at Poughkeepsie, and was beaten by both Cornell and the University of Pennsylvania. In 1897, at Poughkeepsie, Columbia finished close to Cornell, and the University of Pennsylvania was a good third.

The story of the past is told. Taken all in all, the record of twenty-four years of rowing at Columbia is very creditable. And now, what shall be the future history of boating at the new University? All signs are encouraging. Through the generosity of Mr. Edwin Gould the University has a boat house which is second to none in the country, and located at the very

* Yale entered, but sank in the race.

† This was the record time for the two miles.

foot of Morningside Heights. The boat club is reorganized and all old debts are paid off—a condition of affairs due partly to good management but largely to the liberality of Mr. F. S. Bangs, the boat club's new president. There is a fine, manly sentiment between the undergraduate rowing men and the coach, Mr. J. A. B. Cowles. Let us all hope for a return of the good old days when Columbia's rowing record was the best in the land, and look for a winning crew in 1898.

ROBERT C. CORNELL, '74

THE GYMNASIUM AND ITS RELATION TO THE UNIVERSITY

It is a singular circumstance that the very thing which twenty years ago turned me from Columbia now connects me very closely with her interests; and I think that I can further say, safely and honestly, that never in that period have I lost sight of the fact that Columbia University has had no gymnasium worthy of her, and has done almost nothing for the physical welfare of the thousands of students who enter her doors. Now, curiously enough, this same university, located as it has been in the very heart of the greatest city in this country, largely patronized by city-reared men, with not even a campus for the men to stretch themselves upon, is the one above all others that needs facilities for the building up of the physical powers of its students. It is needless here to enter into any explanation of the past seeming neglect, but quite sufficient to say that, just as soon as the opportunity presented itself, the matter has received the attention of the President, Trustees, and alumni, with the result that this department of the University will be second to no other in equipment. All who are familiar with the grand scale on which the new plant is being constructed on Morningside Heights need no further word from me to know that a gymnasium on such a scale will entirely satisfy the most critical.

Even under these circumstances, however, a few measurements and comparisons may help many who are interested to understand what is planned and being constructed.

	Length and width of gymnasium floor.	No. of laps to the mile of running track.	Size of swimming pool.	No. of shower and special baths.	No. of lockers.	No. of students using these privileges.
Columbia	Apsidal 168 × 132	9½	4 to 8 ft. deep 100 × 50	76	1500	?
Cornell	Two rooms, drill hall and g. 150 × 60 80 × 60	30	33 × 13	21	658	All
Chicago	140 × 50	12½	None	—	440	415
Harvard	125 × 90	19½	None	70	2550	2000
Johns Hopkins	90 × 35	20	None	10	800	650
McGill	80 × 60	None	None	?	?	720
Michigan	150 × 95	14	None	18	1240	1500
Princeton	78 × 52	None	100 × 25 × 7		225	
Yale	136 × 92	16	50 × 28	38	1000	?2000

Many other universities and colleges were written to and some have not answered. Of those answering the above seem quite sufficient for the purpose of this paper. I think I am safe in claiming for Columbia the largest equipment under one roof for the physical training and care of students of any college or university in America.

The equipment of the gymnasium will be most carefully selected: everything will be put in that will be of actual value and constant use, and all the apparatus omitted that has no great value except in theory and for decorative purposes. Free, open, clear space is, to my mind, the greatest requisite for a useful gymnasium. With this fact clearly in mind in the arrangement of the apparatus it will be seen that every department of gymnasium work can be carried on at the same time without the least interference—a feature not possessed by any other gymnasium in the country. The class and mass formations can occupy the free space 100 feet wide in the centre. The apparatus for heavy gymnastics, such as horizontal bar, parallel bars, horses, bucks, flying rings, etc.,

go under the track—which, by the way, is twenty-two feet above the floor, and twenty-three feet wide on the under side, thus giving the proper height to all swings, and width enough to attach all fixed apparatus. Outside of the track, on the walls of the gymnasium, around the entire floor, with twenty-two feet of working space, will be fixed all the pulley weights, development apparatus, etc. It will thus be seen that the classes, gymnastics, and development or prescription work can all be going on at the same time, each in its own free space. Under these circumstances it would be much easier for Columbia to carry out a required-optional system of physical training than for any other institution. By this I mean that it would be possible to require a certain number of hours per week of physical work, leaving it entirely optional with each man when he should put in that time, as the gymnasium will be open at all hours for every kind of work.

The running track, which is the longest and widest thus far built in a gymnasium, will be raised more than others at the corners and ends, making possible the greatest speed. The lockers will be 15 x 14 inches on the inside, and 3 ½ feet high; and, instead of emptying their foul air into the dressing rooms and, indirectly, into the gymnasium, each has a direct ventilating flue. The semi-circular plunge bath, 100 feet long, 50 feet wide, and from 4 to 8 feet deep, containing in all about 250,000 gallons of water, is a great feature of this equipment, and can be appreciated only by actual observation. The water there used will all be filtered, constantly flowing in at several points and overflowing at others. It will be pumped from the bath into the boilers, and used again to heat the buildings. Special rooms are set aside for rowing, with separate lockers, showers, etc.; also rooms for fencing and boxing, with a specially fitted locker room for the use of the members of the teaching force. Hand ball, one of the best of all training games, is provided for in a room by itself. The equipment of the Director's office and the examining rooms will be complete; there no expense will be spared in providing the most modern appli-

ances for registering both the physical and vital powers of every student of the University. There will be kept the record of every man entering the University, and on the basis of that record his physical work may be planned and directed.

With regard to the relation between the work of the gymnasium and that of the University as a whole, I should like to make several suggestions.

First, honors and scholarships gained at the expense of health are, it seems to me, bad investments, both for the individual receiving them and the university granting them; and the University should use all reasonable means to discourage and prevent such sacrifices. The University would also do much, in my opinion, toward bringing about greater care for health in the fitting schools, as well as within her own walls, were she to enforce and give credit for physical condition in awarding honors and scholarships and in giving aid to needy students. Such a rule may seem severe; but, if enforced rigidly, it would put an end to harmful cramming for scholarships, and might save some young men from lives of impaired usefulness, at the same time that it provided for awarding such prizes to men better capable of rendering lifelong and efficient service to the University and the world.

Second, Columbia should require a rigid examination as to physical condition before a student is eligible for any team, crew, or other athletic competition. In this way it will be possible to prevent very much harm to the individual and to save the expense and trouble of trying to train men with spirit and ambition but without judgment or power. This rule is at the present time being enforced with great benefit in some of our colleges where many men not trying for athletic honors regularly strive to get into the eligible list, with marked benefit to the physical condition of the whole institution.

Third, every undergraduate student should, in my opinion, be required to exercise in the gymnasium at least two hours per week, or offer a satisfactory equivalent of physical exercise in college games and sports.

With a gymnasium second to none in size and equipment,

it is important that Columbia should make a fitting use of so great opportunities. To this end, it is to be hoped that all members of the University will unite in putting into execution a system that shall produce noteworthy results. By these means, the College may be kept more constantly before the public, the student body may be more thoroughly united, alumni interests be kept alive, and men sent out so fortified with physical health and force that they may live longer, work harder, and achieve greater success to the glory of their Alma Mater.

W. L. SAVAGE, M.D.,
Adviser in Physical Training

ZOÖLOGY AT COLUMBIA

"I give and bequeath to the Trustees of Columbia College, in the City of New York, the sum of one hundred thousand dollars. I express the hope that such sum may be used for the endowment of some new professorship, which, in the good judgment of the Board of Trustees, may be needed in any of the schools or departments of the College. But this expression of mine is in no way to limit the absolute right of said corporation to use said sum for any of its corporate purposes * * *."

The above paragraph is from the will of Mr. Charles M. Da Costa, a graduate of Columbia College in 1855. This munificent legacy of \$100,000 was the indirect means of the founding of the Department of Biology. A Committee of the Board, after a special study of the educational needs of the College in 1891, presented a unanimous report, the spirit of which centered in the following passage:

"In the mind of the President, which has been confirmed by testimony from almost every faculty, the literary, as well as the scientific, there is no direction in which Columbia, as a university, is so deficient as in the great department of study known as Biology. It is in this field that the most interesting and important results of scientific research are being achieved at the present day. Columbia, in effect, has not entered it at all. At the same time there is being carried on at the College and in the Medical School more or less work which can be articulated to great advantage with the Department of Biology * * *."

This important first step having been approved, the Trustees decided to prepare for teaching biology, and especially zoölogy, upon a liberal scale, provision having already been made for the important kindred branches of botany, physiology, and, to a certain extent, palæontology. Mr. Da Costa's bequest was more than doubled from other university funds. Professor Henry F. Osborn was called from Princeton to teach vertebrate zoölogy; Professor Edmund B. Wilson from Bryn Mawr, for invertebrate zoölogy; Dr. Bashford Dean from Columbia University, as instructor in vertebrate zoölogy; Mr. Arthur Willey from the University of London, as assistant to Professor Wilson. Two years later, Dr. O. S. Strong was called from Princeton to take the subject of neurology. The progressive spirit of the President and Trustees was thus shown in the creation of a staff of instructors large enough amply to care for graduate and undergraduate instruction, and at the same time to carry on original investigation. This was upon the educational theory insisted upon by Professor Osborn, and fully supported by President Low, that the teacher who has no time for research rapidly becomes an ineffective and uninspiring teacher, and that over-teaching defeats its own ends.

The choice of the staff was naturally made gradually, and the opening of the department was wisely postponed by the President until 1892. In the meantime Professor Osborn was invited to deliver the Cartwright lectures before the College of Physicians and Surgeons, and for his subject chose contemporary problems in evolution and heredity. Professor Wilson and Dr. Dean were, during the same year, sent abroad on generous fellowships to visit different foreign laboratories and centres of investigation and gather the latest methods of European research. This proved to be a most fortunate circumstance, for it indirectly led to the most important single line of researches which have come from the laboratory, namely, those upon the cell, under the direction of Professor Wilson.

Opportunity was also afforded for the institution of the

teaching type collection, which now constitutes an important part of the educational equipment of the laboratory. A series of beautiful marine types was selected at Naples from the famous marine station there. These were added to the valuable collection made in the Bahamas by the late Dr. John I. Northrop, and to the zoölogical materials of the School of Mines collected by Professor Newberry. While speaking of the teaching type collection, it may be said that it has never been the purpose of the Department to build up a great museum, dependence being placed upon coöperation with the present and future collections of the American Museum of Natural History. Yet it has proved to be more and more essential year by year to illustrate the lectures and demonstrations by means of types from all the divisions of the animal kingdom. Great care has therefore been taken in this matter of teaching types, and considerable sums have been expended, from year to year, especially with Friç of Prag, Müller, and Ward. The most abundant additions to the teaching collection, however, have been made by the various expeditions sent out from the laboratory to points along the Atlantic and Pacific coasts. The teaching equipment is still far from complete, and new types are being constantly added to it from the departmental appropriation, the object being ultimately to depend upon preparations and specimens rather than upon illustrations and text-books. As regards the material development of the Department, the work of the first five years was carried on under great difficulties in the College of Physicians and Surgeons, in the laboratory temporarily arranged for the purpose. The new university site was, therefore, long anticipated as the promised land; and, from the time that Mr. W. C. Schermerhorn's noble gift of a natural history building was announced, all the members of the Department have been deeply interested in the development of an ideal laboratory plan for the upper floor of Schermerhorn Hall, which had been assigned for this purpose. The illumination, as presented in the architect's original plans, was greatly increased; and after this essential

feature was secured, it remained to arrange the very extensive spaces so as to provide for every stage of instruction, from elementary biology to the most advanced research. The plan was studied, both in its larger features and in its minutest details, with the utmost care, every point being thoroughly discussed. The result has repaid all this labor, for it has already proved to be an ideal working laboratory. The large departmental library is in the centre, opening on South Court; the teaching museum is located in the hallway, where it is passed and repassed by all the students; the chemical and supply rooms are also central; the aquarium is admirably placed; the graduate and undergraduate section rooms include eighty tables fully equipped; two large secluded laboratories are reserved for advanced research; and the most advanced students are provided with private research rooms—a much coveted privilege. All who have seen the laboratory pronounce it a complete success and second to none.

This anticipates the working out of a theory of biological education at Columbia, which has required more care and thought than any of the other matters connected with the development of the Department. The scheme presented below is slightly modified from that originally presented to the Trustees, as expressing the general relations and environment of biology in the college and in the university course. The problem was to institute these relations, and at the same time plan a progressive course in zoölogy proper.

RELATIONS OF BIOLOGY

<i>Scientific courses preparatory to biology are:</i>	<i>Collegiate and university courses in:</i>	<i>Qualifying the student for university courses and training in:</i>
Elementary Physics, one year.	BIOLOGY.	Zoölogy as a profession.
Elementary Chemistry, one or two years.	(Zoölogy, Botany, Physiology)	Palæontology and Historical Geology.
Physical Geography and Geology.		Anthropology.
		Medicine as a profession.
		Physiological Psychology.
		Organic Chemistry.
		Philosophy.

Biology is to be regarded as a special subject of rare interest pursued for its own sake ; also as a fundamental part of education, literary as well as scientific and philosophical—in science quite as important as physics and chemistry ; and in philosophy of far greater importance, because of its close relation to human origin, history, and society. Further, it has a practical side in its relation to medicine, for which in the minds of the best educators it forms an absolutely essential preparation ; and a theoretical side in its relation to palæontology, geology, anthropology, psychology, organic chemistry, and philosophy, in which a certain amount of zoölogical knowledge is also an essential factor of a well-rounded education.

Further developing the more restricted sphere of zoölogical education, it appears that, so far as specialists are concerned, the highest type is the broadest type, and that the well trained naturalist, familiar with animals and plants in their living forms and natural surroundings, is the peer of the worker with an exclusively laboratory education. Thus provision had to be made for training in the field as well as in the laboratory—for instilling practical knowledge, as well as theoretical and book knowledge, into students with many different aims.

With these general motives or guiding principles kept constantly in view year after year, various changes have been made in the courses, in order to make them consecutive and constituent parts of a regular, progressive zoölogical development, and also in order to make them effective in relation to other branches of education. Thus, the first course in elementary biology, offered in the Junior year, has become largely a culture course. It is conducted by the head professors of the Department, who give their best attention to it, in order to inspire the students with interest in the subject—to give them vistas of its wide bearings by explanations of the fundamental principles of biology and of the history and meaning of evolution, variation, and heredity. The course which follows this in the Senior year is more specialized, bearing more directly

upon medicine and other applied sciences, and carrying the student a step forward to the most comprehensive course, namely, the comparative zoölogy of the first graduate year, which includes the final treatment of the animal kingdom as a whole. It is noteworthy that such a course is given in many of the great universities abroad, notably in Leipsic, Jena, and Munich, but that it has been omitted from the university curricula of several of the American universities. Having passed this difficult turning point successfully, the student has still to pursue one or two fundamental subjects, such as embryology; and can then specialize at his pleasure, either upon the vertebrate or invertebrate side, among living or extinct types, in neurology, cytology, embryology, or any division of morphology.

Investigation, as the most important part of zoölogical education, deserves a special paragraph. Even in the Junior year the students are encouraged to look towards investigation as a possible goal. In the Senior year, the senior thesis is taken advantage of for a really serious piece of original work; and already several admirable contributions have been made in this way, especially during the comparative leisure of the summer months. From this point on, training in the methods of investigation occupies one-half the student's time. This has led practically to the adoption of a very high standard for the degree of Doctor of Philosophy; for it is apparent that what is needed in this country—and abroad as well, for that matter—is not more zoölogists, but more very highly trained men. It may surprise the readers of this article to know that during the past six years, only one student has been awarded the degree of Doctor of Philosophy in Zoölogy at Columbia, although a large number of students, who have attended the courses from the outset, are still working for the coveted degree, and no student has left Columbia because he finds the standard too high. It is believed that this standard will finally give our zoölogical doctorate a value of its own, which will fully compensate the men for the prolonged time and energy which they are devoting to it.

Closely connected with investigation is the matter of publication. Here the Department has always been at a disadvantage as compared with similar departments at Harvard and at Johns Hopkins, for example, because no university funds have been available for purposes of publication. Of upwards of one hundred papers and memoirs published the majority have appeared in the *Journal of Morphology*, *The Quarterly Journal of Microscopical Science*, in certain of the German reviews, and in the *Transactions of the New York Academy of Sciences*. Results have thus been widely scattered, and preparations have been made to collect the more important studies and issue them from the University as *Zoölogical Contributions from Columbia University*.

A very telling feature of these investigations is that they lie in so many different lines, and enable the graduate student in the report or journal clubs and seminars to gain an insight into many different methods of attack. A number of papers upon the brain and nervous system and an *Atlas of Neurology* have appeared with the coöperation of Dr. Strong, now one of the editors of *The Journal of Neurology*. Cellular biology has formed an important part of the series of investigations under the direction of Professor Wilson, a special atlas having been issued from the University Press, entitled *Atlas of Karyokinesis and Fertilization of the Ovum*, and representing some of the earlier work which was done here in this line. The most complete contribution to this subject, however, has been the *Cell* volume in the University Biological Series. Morphology of the extinct vertebrates has chiefly occupied the attention of Professor Osborn and Dr. Dean. It is proposed also to collect the studies resulting from the expeditions to the Pacific Coast, and issue them as a separate volume. A very pressing need, however, is an endowment for the purpose of publication and especially of illustration.

The *Columbia University Biological Series*, an outgrowth of a series of public lectures delivered in 1892, published by the Macmillan Company under the auspices of the University Press, has proved very successful. Four volumes have

already appeared and two more are in preparation. The relation of the Department to the community at large was instituted by these lectures, and they have formed an important part of staff work. The first series included such subjects as "The Theory of Evolution," "The Cell as the Basis of Heredity," "The Evolution of the Fishes," "The Ancestry of the Vertebrates," covered in twenty-four lectures by Messrs. Osborn, Wilson, Dean, and Willey. For the second course, in 1893, Professor Edward B. Poulton, of Oxford, was invited to give three lectures upon his specialty, "The Coloring of Animals in Relation to the Darwinian Theory of Selection." Professor Osborn continued the history of evolution by four lectures on "Modern Evolution;" and Professor Lee, of the Physiological Department, introduced the study of comparative physiology of the nervous system. In 1896 a third series was given, the University being fortunate in securing Professor C. Lloyd Morgan, who lectured on the "Instincts of Birds in Relation to Their Habits;" while other lectures being given by Professor Chapman, of the Museum of Natural History, and by Professor Osborn. Professor Morgan's lectures were afterwards published in his volume, *Habit and Instinct*. Such lectures require a great deal of time and considerable self-sacrifice, but they form part of the philanthropic duty of every scientific worker.

The rare qualities of the *naturalist*, so far as they can be developed by education, have also been carefully fostered. For four years the University has maintained a research table at the Marine Laboratory of Woods Holl, which has attracted many graduate and undergraduate students. More recently, William E. Dodge, Esq., has generously subscribed for a half-year table at the famous Zoölogical Station of Naples; and efforts are being made to combine with some other university for a full-year establishment, which will be known as the American University Table. These stations, however, important as they are, lack the inspiration of the free study of nature in an unknown region, which has played the most important part in the training of the world's great naturalists,

such as Darwin, Huxley, and Cope, and has proved superior in its effects even to the training afforded in these finely equipped summer laboratories. Such study cultivates independence of resources: a worker is thrown upon his own inventive capacity to overcome difficulties of various kinds in the discovery and collection of new and rare objects; and he becomes intimately familiar with the appearances and habits of living creatures. To supply this need the summer expeditions were instituted. Two years ago, after a careful consideration of the possible stations upon the Atlantic and Pacific coasts, it was decided to enter the little known region of Puget Sound. Some of the Trustees and other friends of the University subscribed generously to the project, leading to the very successful expedition of 1896, which took a party of six instructors and students to the Pacific coast and resulted in the acquisition of extremely valuable material. The second party, in 1897, was equally successful, but unfortunately a large part of the collection was destroyed by shipwreck. It is intended to make this independent exploration a permanent feature in the work of the Department, but at the same time the fixed marine laboratories will be sustained and encouraged. An endowment for these expeditions is also greatly needed, for it is embarrassing and difficult, year after year, to appeal to the same generous friends to contribute for these purposes.

Mention has been made of the American Museum of Natural History. The association with this Museum has already been of great service, and promises to be of still greater service in the future. Professor Osborn, as Curator of Vertebrate Palæontology at the Museum, has not only very great opportunities for his own investigation, but can furnish to students valuable research materials in this important line. This work, which began with the collections of fossil mammals, is now widening out to include the reptiles, and will undoubtedly include the fishes also, forming a comprehensive ally to the work which is done in the regular departmental courses in palæontology, considered as historical zoölogy.

Agassiz's famous maxim, "Study nature, not books," was

not intended to be taken too literally; for books are at every turn absolutely essential, and they form one of the most expensive parts of the equipment of the zoölogical branch of the University. The Department was extremely fortunate at the outset in the generous gift of Charles H. Senff, Esq., first of \$10,000, and later of \$5,000, towards the library. This was secured through the action of Mr. Senff's nephew, Dr. Northrop. This enthusiastic and able student unfortunately lost his life during the year just preceding the final establishment of this department, and it was decided as a memorial to him to name the departmental library "The John I. Northrop Library." It is now fairly, but not fully, complete; and, although constant additions are being made to it, a special purchase to the amount of \$20,000 in new books is necessary to give investigators all that they require in the way of reference literature.

It is clear that only a beginning has been made towards the development of zoölogy at Columbia, or of work which will compare favorably with that which can be done with the keen and zealous spirit that pervades our American university students at the present day. The greatest encouragement we Americans receive is from our old masters and present colleagues in Germany, who are even more enthusiastic than we are over the outlook of biology in this country. Over-confidence, however, is a bar to progress; and, while we have every reason to feel that Columbia has started in the right direction and has made considerable progress, it must be made clear, as a final word, that the work is still far from complete, and that probably another five years are necessary before the plans which are now in mind can be fully carried out.

HENRY F. OSBORN

THE DEPARTMENT OF THE ROMANCE LANGUAGES AND LITERATURES

The scope of the Department of the Romance Languages and Literatures is stated as follows in the opening paragraph of the descriptive pamphlet which is issued every year by the

Department: "The Department of Romance Languages and Literatures has charge of all the courses of instruction and research throughout the University, dealing with the various languages that trace their origin to the speech of ancient Rome." In its present form the Department has existed only since the year 1889, when Professor Charles Sprague Smith resigned the professorship of modern languages and foreign literatures in order to become the head of the new Department of the Romance Languages and Literatures, leaving the Germanic Languages and Literatures entirely under the direction of Professor Boyesen. Professor Charles Sprague Smith resigned his position in 1891, when the Department was placed under the direction of its present head. It was not until 1893, however, that the Department could be considered as fully constituted, thanks to the acceptance of the newly created chair of Romance philology by Professor Henry Alfred Todd, then professor of Romance languages at the Leland Stanford Jr. University in California. The present staff of the Department consists of two professors, one adjunct professor, one instructor, and two tutors. Large as this number may seem, it is only by the greatest efforts on the part of the corps of instructors that the Department succeeds in doing anything like adequate justice to the many important subjects of instruction with which it has to deal. It now gives instruction in French (old and modern), Italian, Spanish, and Old Provençal; in French, Spanish, and Italian literature; and in Romance philology. It is also prepared to give instruction, when requested by competent students, in Portuguese and Rumanian.

Before the languages of this group were assigned to a single department of instruction, and treated as coördinate parts of one branch of the science of language, some of them had at various times been taught separately in Columbia College. A professorship of French had existed from 1784 to 1799, and a professorship of the French language and literature existed from 1828 to 1866. A professorship of the Italian language and literature existed from 1826 to 1836,

when the incumbent was the Italian poet, Lorenzo Da Ponte, author of the libretto of *Don Giovanni* and of *Le Nozze di Figaro*; and a professorship of the Spanish language and literature existed from 1830 to 1860. For twenty years, however, from 1860 to 1880, the Romance languages were not represented in the curriculum of the School of Arts. In the latter year an instructorship in French and an instructorship in Spanish and Italian were established, and these were the small beginnings of the present Department of the Romance Languages and Literatures.

In the spring of 1893, the Department issued, for the first time, a pamphlet describing the courses it offered for the following college year. It then offered 17 courses in French, 4 in Italian, 4 in Spanish, and one in Provençal. It now offers 21 courses in French, 5 in Italian, 5 in Spanish, one in Provençal, and 4 in Romance philology—a total of 36 courses, some of which have to be divided into several sections. The aim of these courses is to offer to students in the Department (1) practical, (2) literary, and (3) philological instruction in the various languages of the group. The courses that are mainly practical are A, II, and III in French, I in Italian, and I in Spanish, to which must be added four courses that cannot be counted for a degree, viz., an elementary course in French for graduate or advanced students who have had no previous opportunity to study that language, two courses in French conversation, and one in Spanish conversation.

The result aimed at in the practical courses is to give the student a good reading knowledge of the language taught, and to enable him to understand the language, when spoken, and to pronounce it himself with approximate accuracy. Students who wish to acquire more facility in speaking must resort to the special courses in conversation.

Composition in the foreign language is not neglected. Course III in French is specially intended for students who wish to acquire a high degree of proficiency in writing that language; while essays written in French, in Italian, and in

Spanish, are required in all the courses dealing with French, Italian, and Spanish literature.

Students are introduced to French literature through Course II in French, which gives them a general view of the subject and provides for a course of reading that includes representative masterpieces of the literature of France during the last three centuries. It is a course intended for Sophomores and for Freshmen who before entering college have had more instruction in French than is required for admission. Courses IV, V, VI, VII, VIII, IX, X, XI, XV, and XVI deal with special periods or with special literary topics; and the highest of them are university courses, intended mainly, or solely, for graduate students. The highest work in literary research is of course done in the Seminar; while Course XVII, on the methods of teaching French, is a pedagogical course, intended for those who expect to choose teaching as a career and offered to students in the Teachers College as well as to students in Columbia University. These courses cannot all be given every year: for instance, Courses V and VI alternate with each other from year to year; and the same is true of Courses IX and X.

The principal periods in Italian and Spanish literature are dealt with in Courses II and III in Italian, and II and III in Spanish, which are alternating courses, and are offered to students who have received practical instruction in Italian I and Spanish I. The greatest masterpiece of Italian literature, the *Divina Commedia*, of Dante, is studied in Italian IV, which occupies two years. Spanish IV deals with the old literature of Spain, especially with the poems centering upon the great National legend of the *Cid*. One course in Italian and one in Spanish, the courses numbered V, are offered to the students who wish to have a general acquaintance with the literature of Italy and Spain without making any special study of distinct periods of these literatures.

Romance philology, without a study of which no one can expect to become a proficient instructor in any of the Romance languages, is presented to the student at first in a very ele-

mentary form in Course II, the subject of which is a history of the French language. Courses XIV and XV in French are devoted to the study of Old French, and occupy an intermediate position between purely literary and philological courses; the same may be stated of the course offered in Old Provençal; while the special courses in Romance Philology, numbered from I to III and culminating in the seminar of Romance philology, are intended to give the student a thorough training in the methods of philological investigation.

All of the above courses, with the exception of the highest, are carefully graded. A student who enters Columbia College with no more French than is required for passing the entrance examination, or with no French at all, and who is therefore required to take the elementary course during his Freshman year, may, at the close of his Senior year, have acquired a thorough reading knowledge of the language. He may further have a good knowledge, not only of French literature in general, but also of the seventeenth and eighteenth century literature in a more complete form—being thus acquainted with the works of Pascal, Bossuet, Corneille, Racine, Molière, La Fontaine, Voltaire, Rousseau, Montesquieu, etc.. In addition he may have become acquainted with the main principles of Romance philology and with the history of the formation of the French language. As several of the courses he has attended have been conducted in French, he must be able to understand spoken French well, especially when uttered with distinctness and deliberation. He may have acquired, besides, a reading knowledge of Spanish and Italian, and may have begun the study of the literature of these languages. Some students begin to specialize in the Department in their Junior year, and these may have added before graduating some of the higher university courses, dealing with such subjects as the romantic movements in France, the poetry of Victor Hugo, the history of literary criticism in France, mediæval French poetry, the French chroniclers of the middle ages, etc.

The Department, in addition to its regular courses, provides

the students with a number of auxiliary means of increasing their knowledge of the subjects of study under its charge. Several years ago a course of weekly lectures was organized, which are given in French, for the benefit not only of the students in the Department, but of all the members of the University and of affiliated institutions and their friends. These lectures deal with topics of general interest, call attention to the leading events of the year in the various countries of Romance speech, and are given sometimes by the members of the Department, sometimes by invited lecturers. Among the latter who have addressed the audiences in the past years we may name Professors Emile Levasseur of the Collège de France, and Raphael Georges-Lévy of the Ecole libre des Sciences politiques of Paris; Dr. Paul Gibier, director of the Pasteur Institute of New York; Mr. Edmond Bruwaert, Consul General of France in New York, etc. During the college year 1896-1897, thanks to the liberality of certain friends of the University, it was possible to offer a special course of French lectures, which were given by Mr. Ferdinand Brunetière, member of the Académie Française; and it is hoped that during the present year it will be possible to offer a similar course given by Professor René Doumic, literary critic of the *Revue des Deux Mondes*, who is coming to this country in answer to a call from a sister university. Lectures are given also at times in Italian and Spanish; and every year the Department offers to the whole University a course of four lectures in English, explanatory of the works and life of some great writer.

At stated intervals throughout the year—once every two weeks, as a rule—there are meetings of the Romance Club. This club is an organization consisting of all the instructors and advanced students in the Department, who meet for the double purpose of promoting social intercourse and of listening to accounts and reviews of the most recent publications here and abroad dealing with subjects of interest for the Department. These meetings have proved very stimulating to those attending them, and their results have been in every way gratifying to the professors in the Department.

A number of former students of the Department are now holding important positions in sister institutions. Among these we are happy to name the recently appointed professor of English in the College of the City of New York, Mr. Lewis F. Mott, who was the first student to receive from Columbia University a degree of Ph.D. upon work done principally in the Department of Romance Languages and Literatures.

It may here further be stated that the instruction in French and Italian in Barnard College is entirely under the direction of instructors belonging to this Department.

ADOLPHE COHN

EDITORIALS

The hopes and aspirations of many generations of Columbia men, ambitious that their Alma Mater should hold a large place in the life of the people, found their realization on the fourth of October when the University entered into possession of its new home. No formal ceremony marked the occasion; but by the thousand officers and students who attended the opening service the true significance of the event was deeply felt, and there was a proud sense of possessing at length a home worthy of the University, nobly expressive of a great past and of a still greater future. Impressive as are the evidences afforded by the stately and spacious buildings, still more do they appeal to the imagination as witnessing the accomplishment of the hopes of those who have been charged with the administration of the College, and who from its earliest days have foreseen and planned its great mission. No one can visit the new site without becoming conscious that the removal of the University has accomplished far more than a mere change of physical environment. It has passed from a lower to a higher level in more senses than one; and this uplifting and broadening transformation has its truest value in the hope which it holds out for the future, not only to the University and its students, but to the city as well, and to the increasing number who will feel its influence. As Columbia men, we may well rejoice in the work which has been accomplished, and in the still greater possibilities which have become attainable.

For so great an undertaking, the removal of the University to Morningside Heights has been effected with remarkable despatch. The initial step towards securing the site was taken by the Trustees on December 7, 1891, when they voted to open negotiations for the purchase. Though the project was received with very general approval, it was regarded by many as impracticable, and few, if any, expected to see it an accomplished fact within six years. The removal and re-establishment of the University in its new quarters within so short a period and upon so large a scale are without a precedent in the history of educational institutions. The undertaking has demanded both courage and energy, and the great financial obligations which it has involved, and which still remain in large part to be met, cannot for a moment be overlooked. A sense of loyalty to the city, and a feeling that the first duty of the Uni-

versity was to the people of the city, deterred the Trustees from removing to a more distant and less costly site, and they have the right to expect the city to regard the mutuality of the obligation. Not only has the University made itself a conspicuous and beautiful feature of the municipality, but by rebuilding on so much broader foundations it has placed itself in a position to offer far greater and wider educational opportunities than ever before. Coupled with these physical advantages is the liberal spirit which has been evinced to so marked an extent in the establishment of fellowships and scholarships, rendering it possible for every capable student of the most limited means to avail himself of all that the University offers. Under these new conditions it will be possible for students to benefit to the full from the new curriculum, which will render the College the natural gateway to the University, and from the enlargement and enrichment of many departments of the University.

The creation of these favorable conditions has necessitated the incurring of a large indebtedness, and the maintenance of the University upon its increased scale will demand larger resources. Gifts and endowments will, therefore, be needed more urgently than ever before. Such aid as the University has received from Mr. W. C. Schermerhorn and from the Havemeyer family must be looked for from other quarters. The Physics Building and the Engineering Building should each bear the name of a donor, and the Gymnasium also should come to the University as a gift. So essential were all these buildings regarded by the Trustees as to justify borrowing the money with which to build, but it was with the hope that the realization of their utility would prompt others to assume the financial obligation. Only by proceeding with the new buildings to the point of making them fully adequate for present needs was it possible to demonstrate the purpose of the University, or to render that purpose attainable. The group that crowns the summit of Morningside Heights stands to-day as a concrete expression of intellectual power and aspiration, as the Cathedral stands as the emblem of religion. The University and the city simultaneously enter upon a new and larger life, and it is to be hoped that the growth of the University and the development of a broader and closer sympathy between it and the body of the people may be coincident with the expansion of the city.

The University has suffered a severe loss in the death of Charles

Edwards Colby, adjunct professor of organic chemistry. Dr. Colby entered the School of Mines in June, 1873, and graduated with the degrees of Civil Engineer and Mining Engineer in 1877. Soon after graduation he assisted Professor Chandler in certain important investigations in organic chemistry, and was so successful in his work and showed such a keen interest in subjects relating to both organic and physical chemistry, that he was appointed to give theoretical and practical instruction to the students, first as assistant and then as adjunct professor of organic chemistry. He was never physically strong, and during the last few years, largely owing to his indefatigable industry, his health failed more and more, until at the last he was obliged to ask for leave of absence. His death occurred on October 15, 1897.

Dr. Colby was one of the most accomplished graduates we have ever had in the School of Mines. He was an excellent linguist, a good draughtsman, a fine musician, and thoroughly experienced in both mathematics and physics. He obtained a wide reputation, both here and abroad, in his own subject of organic chemistry, both by his instruction and by his investigations, and was fully abreast of the advanced work in the allied subjects of theoretical and physical chemistry. It is deeply to be regretted that a mind of such unusual and varied attainments could not have been endowed with a more powerful frame, for, in that case, Dr. Colby would undoubtedly have proved one of the most brilliant ornaments of his profession, either in this country or abroad. As it is, the memory of his kind and gentle spirit, his scholarly mind, and his conscientious, painstaking devotion to his labors will long remain as a monument and an encouragement to his colleagues.

UNIVERSITY NOTES

THE LIBRARY

In accordance with the resolution of the Library Council, and by order of the President, the library was closed on June 12 to make necessary preparations for removal to the new site. Immediate steps were taken to make a complete inventory of the library. This was carefully done, and a full list of all the books missing or unaccounted for was prepared under the immediate supervision of Mr. Nelson. At the same time a large body of pamphlets and unbound

reports of municipalities, organizations, and corporations of all kinds, which had accumulated, was examined and collated, and duplicate material thrown out. In this manner more than a hundred thousand separate pieces were handled, and a large mass of duplicate material, having no financial value but useful for completing files and series, was turned over to the New York Public Library. As far as practicable the remaining material was arranged in volumes and bound. This work of arranging and binding pamphlets and reports is one that goes on in the library from year to year, but the closing of the library and its removal to the new site created an opportunity for more extensive operations in this direction.

It had been hoped to commence the moving of books by July 1, or at the latest by July 15, when it was expected that the new steel book-stacks in Rooms 301 and 306 in the library building would be ready. As it was necessary to use, in the new library building, wooden shelving from the old building for about one hundred and twenty-five thousand volumes, it had been planned to remove the books from these stacks at the outset, place them on the new steel shelves, take down the wooden shelving and set it up in its place in the new building, and then proceed to move the several sections of the library into their proper places. Unexpected delays in the completion of the steel stacks nullified this plan; and, after long delays, a beginning of moving was made by packing the contents of these cases in boxes, removing the cases, section by section, as they were emptied, setting them up in the new building, and occupying them section by section as fast as they were to some degree in order.

The first lot of books was not sent until August 23; and the work of moving and arranging the library was materially increased by this delay, and by the conditions described above. The process of removal was simple, and reduced itself chiefly to mechanical labor. The boxes used for removal by the other departments of the University were utilized in the library. The books were removed shelf by shelf and packed carefully in the boxes, each box being labelled with the call numbers of the first and the last book it contained, and with the number of the room to which it was to go in the new library, together with a running number of the box for the convenience of the workmen handling it. The boxes, thus packed and numbered by a detachment of the library staff, were turned over to the men engaged in the work of removal, and were received from them by another detachment of the library staff in the new building. The boxes were unpacked in their regular order, the books placed on the shelves, and the boxes returned for further service.

The books were then on the shelves, the contents of each box in proper relation to the books contained in the boxes preceding and following it; but within the limits of the three or four shelves included in each box there was naturally the greatest disorder, created by the packing and unpacking. It next became necessary to arrange the books carefully on the sections of shelves in their proper order. Another element of disorder was the necessity, frequently met, of removing books from the shelves in the new building, especially in the steel stacks, to enable the workmen to complete some details of construction.

The work of fitting up the library and preparing it for use has been carried on up to the present time, and as fast as the various rooms have been available they have been occupied. The floor of the great reading-room was completed and cleared so that on Monday, October 4, at the beginning of the college year, chapel services were held in that room as an introduction to the work of the University on the new site. During the week following, the catalogue was transferred and placed in the new catalogue card cases in the delivery room; and on October 12 the library was opened for the delivery of books to be used out of the building. The law library was substantially ready at the beginning of the college year, and, with slight interruptions from workmen, has been in constant use. The opening of this general reading-room was delayed somewhat by the arrangement of book-cases and tables, but it was practically ready for use about November 1. The library was opened for readers in the evening for the first time on November 15. The law reading-room and the special study-rooms in Rooms 301 and 306 are kept open until 10 P. M.; while the general reading-room is closed for the present at 6 P. M., its readers being accommodated in the evening in the law reading-room.

The main reading-room, 92.5 feet in diameter and rising 106 feet to the centre of the dome, is splendidly lighted by four huge clear-story windows. Book-cases around the sides between the granite columns, in the corners, and in the centre, will hold 12,000 volumes. A stack-room beneath and directly accessible will contain 150,000 volumes. In the second story of the east and west wings are long rooms supplied with the improved Fenton steel stacks in the inner portion, while the outer space can be divided by large sliding-doors into nine special study rooms in each wing. These stacks have a capacity for 100,000 volumes each. The north wing contains the law library, with a reading-room rising through the two stories, and

a stack-room below with a capacity for 28,000 volumes. The reading-room and the professors' offices have 6,000 volumes on the shelves. The first story of the east wing is given up to the Avery Architectural Library and is an ideal library room, finished in quartered oak, with every convenience for the use of that fine collection of books.

The galleries beneath the clear-story windows are also shelved and will hold about 16,000 volumes. The classical special study-rooms, adjoining the Avery reading-room on the north, will shelve 30,000 volumes. The present shelving will accommodate about 450,000 volumes, but as the growth of the University in new buildings relieves the necessity for using parts of the library building for other than library purposes, room for 600,000 volumes additional will be released, with an increase of special study rooms as well.

The Faculty of Political Science is now located on the top floor of the west wing of the building, and the Faculty of Philosophy in the east wing. The lecture rooms are on the third floor of the north wing. The delivery room is in the west wing, just across the corridor from the main reading room; adjoining are the periodical room and the library administration rooms. The dictionary card catalogue of nearly 450,000 cards has been re-arranged in 864 single drawers in the delivery room, and is thus accessible to a larger number of users. The librarian's office is in the south end of the west wing, adjacent to the library administration rooms.

Accessions to the library for the college year ending June 30 were 11,928 volumes. Additions to the library from July 1 until November 15 were 5,337 volumes.

THE COLLEGE

An attempt has been made, with but partial success, to obtain a list of the secretaries of classes which have graduated from the College, and it is earnestly hoped that the list now published may be supplemented by such further information as will enable the BULLETIN to reprint it in complete form. It has not been the rule for classes to elect permanent secretaries, but as a matter of usage the secretary chosen in the Senior year has generally held office for life. It is greatly to be desired that the office should be made permanent, and that each secretary should be in communication with the members of his class. No one who is familiar with the *Harvard Graduates' Magazine* can fail to be impressed by the number and

interest of the personal items furnished by class secretaries and published in each number of the magazine. That the sense of relationship which has thus been maintained between members of classes, and between classes and the University, has been a source of pleasure to individuals and of strength to Harvard cannot be doubted. Among our classes '74 probably holds the record for its series of annual dinners, unbroken since the date of its graduation; but '82, '83, and some others have maintained strong class organizations, and the number might be increased to great advantage. Reports of class meetings, and information which will contribute towards completing the following list of secretaries, are desired for publication.

CLASS SECRETARIES

- '51. William H. Draper, M.D., 19 East 47th St.
- '52. John W. Harper, Franklin Square.
- '53. Rev. Wm. G. Farrington, D.D., Orange, N. J.
- '57. Elbridge T. Gerry, 261 Broadway.
- '60. Eugene H. Pomeroy, 156 Broadway.
- '61. Gratz Nathan, 106 Fulton St.
- '62. Charles Ames Spencer, 319 West 28th St.
- '63. Rev. Rockwood Mac Questen, Glen Cove, N. Y.
- '65. Abraham Van Santvoord, 111 Broadway.
- '67. Henry D. Lloyd, *Chicago Tribune*, Chicago, Ill.
- '69. Charles A. Peabody, Jr., 2 Wall St.
- '71. Clarence R. Conger, 37 Liberty St.
- '72. Wm. Henry Haldane, 52 William St.
- '73. Daniel B. Vermilye, Orange, N. J.
- '74. Frank D. Shaw, 120 Broadway.
- '75. Alister Greene, 1 East 62d St.
- '76. Louis O. Ivey, 46 South St.
- '78. Charles H. Crowe, E. Stroudsburg, Monroe Co., Pa.
- '79. James A. Lynch, 99 Nassau St.
- '80. Rev. Frank B. Draper, New Milford, Conn.
- '81. Herman F. Nordemann, 1309 Madison Ave.
- '82. Edward R. Greene, 15 Broad St.
- '83. Edwin B. Holden, 1 Broadway.
- '85. George M. Thomson, 52 Wall St.
- '86. Samuel T. Gilford, 473 Lexington Ave.
- '88. Dr. B. D. Woodward, Columbia University.
- '89. Hammond Odell, 135 West 75th St.
- '90. Charles L. Livingston, 902 Union St., Brooklyn.

- '92. Arthur T. Hewlett, 68 Remsen St., Brooklyn.
- '93. Rev. Sidney H. Treat, St. Stephen's Church, 46th St.,
between 5th and 6th Aves.
- '94. James F. Berry, 172 West 95th St.
- '95. Stephen F. Thayer, 75 Hawthorne Ave., Yonkers.
- '96. John R. Atwill, 1721 Pennsylvania Ave., Kansas
City, Mo.
- '97. William B. Gunton, Law School, Columbia University.

The students of this University have published a volume of *Columbia Verse*, selected from the various periodicals of the College during the last five years, and they offer it modestly as an illustration of their literary interests, their aims, and their ideals. It is a fair gauge of the change that has passed over the College in this period. The different sections are the usual ones; the traditional college Muse, with its ballads, its quips, and cranks; the serious endeavor toward dramatic and lyric form; the block of sonnets; and, lastly, the translations. In the first section, readers of college verse will notice a displacement of the older and finer models of Thackeray, Praed, and Locker-Lampson, by the younger, less delicately felt, less clearly finished work of late Victorian writers of light verse, where facility is more than elegance, and a certain brusque and violent humor recalls our contemporaneity with Kipling and the *Lark*; but these are very transitory fashions. In the serious verse the standard of style and melody is high, the thought exists, and there is much that is sincerely felt, especially in the sonnets, which are, in some instances, remarkable. There is one author who distinctly carries off the palm for volume, evenness, and the unmistakable style of literature; but the others maintain their right, and the number of them shows that both the literary instinct, natural to students, and the respect for literature which tends to serious trial of themselves, are more widespread in the body of students than is commonly supposed. The volume has been carefully prepared, with due regard to making a well-looking book, and presenting the verse handsomely; Mr. Arthur Ware has contributed a pretty cover design; and the entire work is creditable to the taste and spirit of the College, and should appeal to those who are interested in its undergraduate culture.

FACULTY OF APPLIED SCIENCE

Department of Analytical Chemistry and Assaying.—The new laboratories in Havemeyer Hall are practically finished and are

well filled with students taking the several courses offered. The arrangement and equipment of the laboratories are most satisfactory. They are light, well ventilated, and conveniently arranged.

The qualitative laboratory for the present is used by students from the scientific departments of the University and from the College. The number of students taking the course in qualitative analysis is much larger than ever before, the class containing 125 men. A part of this increase is due to the fact that this subject has been made one of the requirements of the course in civil engineering, and also because of the inauguration of the new course in mechanical engineering. All students in the School of Engineering now take qualitative analysis, and a number of College and special students have also elected this course. The desks are a great improvement over those used at the old site; they are most conveniently arranged, with gas, air-suction, and water supply on every desk. The old bottles have been replaced with the most modern and improved style of reagent bottles, with indestructible labels, imported from Germany.

The quantitative laboratory, in addition to being well equipped with desks of the most modern type, furnished with water, gas, suction, and blast, has a well-lighted and conveniently arranged balance room, centrally located. The laboratory is also supplemented by special rooms for water, gas, electrolytical, and volumetric analysis. There is also a room for spectroscopic work. A room on the same floor as the qualitative and quantitative laboratories has been equipped as a library and for microscopic work. This is a new feature and one which is likely to prove valuable to the students, as it places within their reach for ready reference the most important books and journals relating to their laboratory work. The quantitative laboratory already contains over 50 students, among whom are a number of postgraduates, taking special and advanced courses. The changes in the School of Chemistry made last June provided for an analytical option for the third and fourth year students. This included a special course of lectures during the fourth year, supplemented by laboratory practice and thesis work during the second term of the fourth year. A number of students have elected this course, which will be made as practical as possible and include the short commercial methods used in manufacturing and metallurgical works. A new system of instruction has been adopted both for this course and the second year course for the electrical engineers. The lectures are typewritten and distributed to the students, who

then recite on the subject and have the notes for use in the laboratory.

The new assay laboratory is equipped with furnaces for both coal and gas, all of which are practically complete. A much larger number of students than usual are taking assaying. There are now 35 men in the laboratory, among whom are a number of new students from other institutions.

The School of Architecture.—The teaching force in the School of Architecture is this year strengthened by the accession of two new men, who assist Professor Hamlin in architectural design. Mr. William T. Partridge, who was a student in the School in 1886 and 1887, and holder of the Rotch Travelling Scholarship (Boston) in 1890 and 1891, now takes charge of the second and third year work in the drawing-room. Mr. Henry F. Hornbostel, who graduated in 1891, takes in hand the design of the fourth year class.

In the new quarters in the upper story of Havemeyer Hall the School for the first time in its history enjoys really ample and adequate accommodations. The access by ninety-eight steps to the fourth floor is laborious, but the spaciousness and convenience of the rooms make compensation for the labor of reaching them. The architectural library, which commands from its ten north windows one of the finest prospects in the world, is a delightful place to read and study in. Besides the books, it contains a collection of architectural photographs, believed to be larger than that of any other architectural school, and an enormous scrap-book of miscellaneous prints and illustrations, many thousands in number, arranged in classified folios, covering almost every imaginable topic in architecture and archæology. These occupy glass-fronted cases, which fill nearly the whole of one long side of the room.

By lowering the ceiling in the central part of the building, from its originally intended line, sufficient height has been gained in the attic to make what is virtually another story. This is being fitted up as a Museum of Building Appliances and Materials, and as a laboratory where modelling and other work impossible in the draughting rooms may be carried on. The corridor below serves as a gallery, in which are hung a series of framed drawings, mostly from the *École des Beaux-Arts*. The wall-space beneath these is utilized for weekly exhibitions of the current work of the School, and of the drawings made by the students during the summer vacation. An admirably lighted room in the northwest corner of the building makes possible systematic instruction in drawing from the

cast. This is a great desideratum, for which the quarters on Forty-ninth Street offered no accommodation whatever.

The walls of the draughting rooms are hung with the thesis-drawings of the last graduating class, and with the valuable collection of casts presented some years since by Mr. Charles F. McKim, of which only a portion were to be seen at Forty-ninth Street. The extent and richness of this collection, comprising examples of Roman architecture both of antiquity and of the Renaissance, are now for the first time made evident.

The enrolment of students shows about the average number in all classes. Work in all departments is now progressing without drawbacks, although the unpacking of casts and installation of furniture is not yet quite complete.

During the last few months Professors Ware and Hamlin have conducted a number of important competitions for public buildings. Among these the most important is that for the proposed New York Library, on the Tilden, Astor, and Lenox foundations, which was organized by Professor Ware, and for which the final drawings have recently been handed in to the jury. Professor Hamlin has meanwhile conducted the competitions for the Newark High School, the University Settlement House of New York, and the Newark Free Public Library. This sort of service to the public and to the architectural profession is one for which professional teachers of architecture seem to be especially qualified, and the recognition of this fact by the profession and by the public, as evidenced by these competitions, is very gratifying to the friends, not only of the Columbia School, but also of architectural school-training in general.

The McKim Fellowship in Architecture has been awarded to Mr. Henry A. Jacobs, '94, by a jury composed of graduates of the School and of practising artists trained elsewhere. The number of contestants was the largest in the history of this fellowship, now awarded for the fourth time, and the quality of the designs submitted was very encouraging.

The July number of the *School of Mines Quarterly* contains an article explaining the policy of the School in admitting as special students, on the same footing as graduates of colleges and scientific schools, professional draughtsmen of age and experience. This has been reprinted for distribution, along with an illustrated paper from *Architecture and Building* on the course in architecture and engineering. Two students have selected this course in their fourth year; and three graduate students, one from the Institute of Tech-

nology and two of our own men, are candidates for the degree of Master of Arts or Doctor of Philosophy.

Department of Mechanical Engineering.—The winter of 1897-98 is signalized for this department by reason of the opening of the four years' undergraduate course in engineering, leading to the degree of Mechanical Engineer. The importance and fundamental character of the studies belonging in this department have been recognized since the reorganization in the old School of Mines in 1877, but the trend of modern requirements and the response which has been made to them by sister schools of engineering elsewhere, have made it unwise for Columbia to attempt to train mechanical engineers for their life-work under the conditions which hampered the University at its old Forty-ninth Street site. Hence, the former work of the Department of Mechanical Engineering has been the supplying of the needs of other courses in engineering as respects their mechanical side, rather than an independent activity along the lines of its own obvious scope. It has been preferred to give no degree of Mechanical Engineer at Columbia University, rather than to give one after a course of study which would have to be incomplete and unsatisfactory, because lacking the opportunities offered by other institutions upon the laboratory or experimental side.

It was foreseen, however, that these difficulties ought not to be allowed to exist upon the removal of the University to Morningside Heights. Accordingly in May, 1896, the necessary legislation was secured for the opening of the desired course in the autumn of 1897, and this year students have been matriculated for the new course. Provisions have been made in the construction of the University buildings to allow for the conduct of the course, which demands, beside the class-rooms, museum, and drawing-rooms common to any properly organized engineering course, the providing of laboratory facilities and equipment of a special order.

The laboratory organization of a proper course in Mechanical Engineering includes five divisions. The first is the drawing-room. This embraces one of the largest undivided areas in the Engineering Building on the fourth or upper floor. Not only are the mechanical engineering students accommodated here, but also the entire first and second year drawing of all engineering courses is conducted by the Department, as the wisest and most convenient arrangement. One hundred and sixty men can be accommodated at one time, and by an arrangement of alternate sections, a much

larger number can be provided for. The drawing-rooms are splendidly lighted from all sides and from the roof, and constitute one of the notable features of the buildings and the course.

The second division covers the shop-laboratories or workshops. This has been secured outside of the University buildings by a most satisfactory arrangement with the Teachers College, whereby the tools and equipment of the Macy Building of the Horace Mann School for manual training are made available for the use and instruction of Columbia engineers. Two special instructors have been secured, who report directly to the Mechanical Engineering Department, in this division of their work, and two sections of electrical engineers and one section of civil engineers are being instructed, in addition to the broader and more comprehensive work in progress for the first class of mechanical engineers. The course in wood-working for the mechanical engineers leads up to pattern-making as a prerequisite for capable design of work to be executed in cast-iron; and the work in the metal-working shops is laid out to equip the young engineer with some practical knowledge of the manufacturing processes with which he will be concerned, besides the mental training which is always found to be desirable from carefully planned exercises with the hand and approved tools. The Department is much gratified at the interest of the students in this work and the results attained.

In developing the three other divisions of its experimental side, which may be termed the mechanical laboratories properly so called, the Department has been immensely aided by the interest and coöperation of friends outside of the University circle. The three divisions are designated respectively the hydraulic motors laboratory, the steam and motive power engineering laboratory, and the testing laboratory. These are to be located in the great vault area under the esplanade in front of Havemeyer Hall, and just north of the Engineering Building. They will occupy 210 feet in length by 32 feet in width, and will have a height or head-room of 21 feet. The hydraulic motors laboratory will be the gift of Mr. Charles C. Worthington, as a memorial to his father, the late Henry R. Worthington, of New York, mechanical and hydraulic engineer. The Steam Engineering Laboratory will be a gift from Mr. William W. Allis, and will be a memorial to the late Edward P. Allis, of Milwaukee. The Testing Laboratory is at yet without a personal name. These laboratories will be the finest and best equipped of their class to be found anywhere, and will provide facilities for

undergraduate and advanced university work in their several lines which will be unsurpassed. Details concerning them will be a matter of later announcement in succeeding issues of this BULLETIN. The delays incident to the removal of mechanical appliances from the old site, and connected with the proper preparation of the new location to receive them, have prevented any rapid progress in the laboratory work of the Department along the old lines and the extension which is desired and expected along the new paths.

Department of Metallurgy.—Professor Henry M. Howe has been appointed to the chair of metallurgy made vacant by the resignation of Dr. Egleston, and with his installation a change in the instructive and administrative work of the Department has been inaugurated. The following summary embraces the leading features of the change.

Owing to the great breadth of the subject of metallurgy, the lectures have been divided, Professor Howe taking the subjects of copper, iron, and steel, and Dr. Struthers lecturing on general metallurgy and the metallurgy of lead, gold, silver, and the minor non-ferrous metals. In addition to the lectures one hour a week for each class is devoted to supplementary discussions, thus giving the students individual instruction, and affording them an opportunity of obtaining a thorough understanding of the subject.

The opportunity offered by the removal from the old site has been made use of to separate the collection into two parts, one of which will be on public exhibition; the other is stored, but accessible for special study when desired. The exhibited specimens will be selected with special reference to purposes of instruction, grouping the materials and products of the important metallurgical processes in such a way as to show not only the general scheme of operation, but also the relative quantities of materials treated and of products resulting. In this way the important specimens will be so grouped that the general features of any given process can be quickly seen.

The development of practical work for the students in the course of metallurgy is being carried out, and with the present equipment of gas furnaces, calorimeters, and pyrometers practical work will be done in the heat treatment of metals and ores, the study of refractory materials, the testing of the heating value of fuels, the measuring of high temperatures, and work of like character. It is to be hoped that in the near future a proper installation of furnaces, leaching vats, and other apparatus will be provided for special study of roasting, smelting, and lixiviating processes.

The second year in the summer school in practical metallurgy was held in July, 1897, at Chicago and Pittsburg. The class of sixteen students in the courses of metallurgy and mining engineering was under the direct supervision of Dr. Struthers. The subject selected for study was the manufacture of iron and steel, and these two regions, furnishing by far the greater part of the iron and steel production in the United States, afforded unusual opportunity for study. The works of the Illinois Steel Company, the Carnegie Steel Company, and the Black Diamond Steel Company were visited and studied in detail, and minor trips were made to lead smelters and refiners and to coking plants. A detailed description of the work called for was furnished to each student and the requirements were strictly adhered to. These comprised all the important data relative to the subject, including descriptions, dimensioned sketches of furnaces, and the chemistry and mechanical engineering of the works. Class and individual instruction was given by Dr. Struthers, and notebooks, were freely used and corrected at the completion of the day's work, while the subject was fresh in mind. The character of the work accomplished by the students, and their unflagging interest during the entire trip, were eminently satisfactory, and it is hoped that this important feature in the instruction of metallurgy will be made permanent.

Department of Mining.—The Summer School of Mining, in charge of Adjunct Professor Peele and two assistants, was held in Michigan. Four weeks were devoted to study of the iron mines of the Pittsburgh and Lake Angeline Iron Co., at Ishpeming. A fifth week was occupied by visits to several other iron mines in the vicinity of Ishpeming, and a trip to the copper district. From Houghton as headquarters the class was taken to the Atlantic copper mine and concentrating mill, the Calumet and Hecla mills, and the enormous surface plants of the Tamarack and Calumet and Hecla mines. In some of these shafts, the deepest in the world, ore is being raised from vertical depths of nearly 5,000 feet. The class contained seventeen students, and it is worth noting that it included an unusual number of graduates of other institutions: one each from Harvard, Johns Hopkins, Troy Polytechnic, and West Point, and two from Stevens Institute.

FACULTY OF MEDICINE

(College of Physicians and Surgeons)

The current year has opened at the College of Physicians and

Surgeons with large classes in each of the four years of the new curriculum. The number of students registered up to November 7th is given on page 77.

It is a gratifying fact that the percentage of college graduates among the medical students is steadily rising, and that the Medical School contains representatives of almost all the leading colleges of the country. Several of the honor men of Harvard, Yale, and Princeton in the classes of 1897 have entered the first-year class. This is the first year in which hospital clinical instruction to small sections of students has been given, and the fourth-year students express great satisfaction at the courses now under way. The chief feature of this instruction is the bedside study of disease, each student watching the progress of a number of patients in the hospital wards at Bellevue, getting full records of the cases from day to day, and having all the advantages of observation which are obtained by the resident staff in the hospitals. The increased facilities for instruction at the Sloane Maternity Hospital are also highly appreciated by the students.

At the last Yale commencement, the honorary degree of LL.D. was conferred upon Professor T. Mitchell Prudden.

The following appointments have been recently made in the Department of Pathology of the College of Physicians and Surgeons: James Ewing, M.D., has been made instructor in clinical microscopy; Charles Norris, M.D., tutor in pathology; Frederick S. Ward, M.D., William R. Williams, M.D., and Frederick H. Floy, M.D., assistants in normal histology; William T. Neuman, M.D., assistant in bacteriology; Francis C. Wood, assistant in clinical microscopy; George P. Biggs, M.D., demonstrator of pathology.

The new course in Clinical Microscopy, at the College of Physicians and Surgeons, for fourth-year students, has been inaugurated under the direction of Dr. Ewing.

Edward W. Kitchel, M.D. (College of Physicians and Surgeons, 1893), fell from a balcony at his summer home at Lake George, receiving such serious spinal injuries that he survived but a few hours. Shortly after receiving his degree he was appointed assistant in normal histology, a position which he held at the time of his death. He was a successful teacher and a careful worker. In 1895 he published the results of an original study under the title of *Notes on the Fixation of Nerve Fibres by Formalin*. Several lines of research were left unfinished at his death.

At the Toronto meeting of the British Association for the Advancement of Science, Professor Lee served on the committee of the section in physiology, and read a paper on *The Ear and the Lateral Line in Fishes*. Professor Lee has also been appointed as one of the editors of the *American Journal of Physiology*, the first number of which will appear in January, under the auspices of the American Physiological Society.

In addition to the regular clinic in orthopædic surgery held by Professor Gibney, a special course to students in sections of ten men each is given by him this year for the practical demonstration of the fitting of surgical apparatus to deformities. This course, as well as the regular clinic, is largely attended and much appreciated.

In the Department of Diseases of Children, Professor Jacobi has added to his regular weekly clinic a new weekly hour—Fridays at 3 P. M., in the St. John's Guild Hospital, 155 West 61st Street, to which he has been invited by the board of governors to take classes of students for bedside instruction. The alumni and friends of the University are, however, well aware that systematic and thorough bedside instruction cannot be attained before the college has its own hospital with daily attendance. The attention of alumni and friends is called to this fact in the same spirit in which the subject was emphasized by President Low in two of his annual reports.

FACULTY OF PHILOSOPHY

In the Great Educators Series, edited by Professor Butler, and published by Charles Scribner's Sons, the volume by Sir Joshua Fitch on *Thomas and Matthew Arnold and their Influence on English Education* was published in September. The volume on *Horace Mann and the Development of American Public Education*, by Professor B. A. Hinsdale, of the University of Michigan, is now in the press.

The enrollment in the several courses in the Department of Philosophy and Education has not fallen off, as was feared might be the case, owing to the removal to the new site, but instead shows a very considerable and gratifying increase. The enrollment in Philosophy I has reached 62; in Philosophy III, 34; in Education I, 31; in Education II, 21.

In the Philosophical Seminar, which deals this year with topics in the history of Psychology, there are twelve members, and the following topics have been selected by them for investigation: 1. Greek psychology before Aristotle. 2. History of the origin, ap-

plication, and development of methods of measurement in psychology. 3. Development of the association of psychology. 4. The psychological contributions of Teten. 5. The history of the meaning of the words "conscience" and "consciousness." 6. The psychology of Paul's Epistles. 7. Phrenology and its relations to the localization of brain functions. 8. Distinction between *animus* and *anima* in Roman and scholastic philosophy. 9. The bi-partite and the tri-partite division of mental phenomena. 10. The scholastic distinction between body, soul, and spirit. 11. The psychology of Descartes. 12. The mathematical psychology of Herbart.

The Education Seminar is dealing with the general subject of the administration of public education in the United States. The topics selected by the twelve members are as follows: 1. Relation of the colonial governments to education. 2. Acts of the national government relating to education. 3. Provisions for education in the several state constitutions. 4. History of the school district as a unit of educational organization. 5. Legislation regarding the teaching profession. 6. The office of state superintendent. 7. The office of county superintendent. 8. The office of city superintendent. 9. Development of the public school system of New York City. 10. The relation of the state to the private college.

Dr. John A. MacVannel, assistant in philosophy, has been appointed to give regular instruction in psychology and education at Pratt Institute, Brooklyn.

Dr. Norman Wilde, assistant in philosophy, has accepted an invitation to give instruction at Teachers College in psychology and logic, during the first half-year.

The Psychological Laboratory, now admirably installed in Schermerhorn Hall, is well equipped for original investigation. The following researches are in progress: The time of perception as a measure of difference in the intensity of sensation, time-phenomena of vision, the normal association of ideas, Professor Cattell; muscular fatigue in its relations to mental conditions, Professor Cattell and Mr. Franz; after-images, Mr. Franz; mental imagery, Mr. Lay; the motor concomitants of sensation and emotion, Mr. McWhood; the measure and nomenclature of colors, Mr. Houston; an experimental study of attention, Mr. Kuntz; the formation of beliefs, Mr. Sumner; individual differences in children, Mr. German; the sense of smell, Mr. Hool. The results of several of these researches will be presented at the approaching meeting of the Ameri-

can Psychological Association, of which Dr. Farrand is the secretary.

The physical and mental tests of the students entering Columbia University are being continued in the Psychological Laboratory. As the results for one hundred students have been published, it is possible for each student to compare his physical traits, his senses, his memory, etc., with those of others, and thus learn in what respects he is above and in what below the average. A committee on the subject of physical and mental tests, of which Professor Cattell is chairman, reported at the last meeting of the American Psychological Association, and similar tests will be undertaken at other institutions.

At the annual meeting of the American Association for the Advancement of Science a paper entitled *A Statistical Study of Eminent Men* was presented by Professor Cattell, who was elected chairman of the section for anthropology and vice-president of the association.

The Eskimos from Greenland recently brought to this city by Lieutenant Peary have been placed at the Museum of Natural History in charge of the Department of Ethnology. With their aid several studies in Eskimo ethnology and linguistics are already being carried on by members of the Anthropological Department of this University.

Field work in anthropology has been carried on during the past summer by Dr. Boas and Dr. Farrand, who spent four months among the Indians of British Columbia as members of the Jesup expedition from the American Museum of Natural History, and also in completing certain investigations for the British Association for the Advancement of Science. The first part of their time was occupied in a study of certain tribes of the interior along the valleys of the Thompson, Frazer, and Chilcotin rivers, and the remainder of the summer was given up to the Indians of the coast. The expedition was very successful in its results, the publication of which will follow as soon as possible.

By a decree of August 26, 1897, the King of Italy has conferred upon Professor Speranza the decoration of the order of the Cross of Italy, making him, as the phrase goes, a "Cavaliere della Corona d'Italia." This distinction was given him in recognition both of his services as an Italian patriot during the period of 1859-1866, when as a young man Mr. Speranza joined those who were struggling to free from the Austrian yoke his native city of Padua, and of his successful endeavors to spread and improve the study of the Italian

language and literature in this country. The same distinction has also been conferred upon Professor Cohn.

The University Library is to receive from the Minister of Public Instruction of France a large gift of the publications of the French Department of Education. Among these publications is a complete collection of the *Journal des Savants* since 1883 and a number of volumes bearing upon epigraphy and archeology. All the serials in the gift will in future be sent to the Library as a gift of the French Government.

The weekly French lectures offered by the Romance Department to all the members of the University and affiliated institutions will be given on Thursday, at 3:30 P. M., in Room 305, Schermerhorn Hall. It is expected that a number of distinguished lecturers will be heard in the course of the year.

FACULTY OF POLITICAL SCIENCE

Mr. C. F. Emerick, Ph.D., 1897, has been appointed assistant in economics at Vanderbilt University. Mr. D. F. Willcox, who also took his Ph.D. last year, has been delivering a course of lectures at the Brooklyn Institute. His book on municipal government has recently been published by the Macmillan Co. Mr. Milo R. Maltbie, who took his degree at the same time, is connected with the literary bureau of the City Reform Club. He has also been delivering a course of lectures at the Brooklyn Institute.

A second edition of Professor Seligman's *Essays in Taxation* has just been issued by the Macmillan Co.

Dr. Ripley has been appointed a member of the board of control of the *American Naturalist*. He is to undertake the supervision of the Department of Anthropology.

Mr. Mathew Brown Hammond, candidate for Ph.D. in the Faculty of Political Science, has been appointed assistant in economics in the University of Illinois.

A collection of *Essays on Civil War and Reconstruction*, by Professor Dunning, is announced for early publication by the Macmillan Company.

FACULTY OF PURE SCIENCE

Department of Astronomy.—Observations for variation of latitude and the constant of aberration were continued during the summer by Professor Rees and Dr. Davis. The Royal Observatory at Naples also continued its work in coöperation with Columbia Ob-

servatory. Both observatories have lately published the results of their first series of observations, covering the time from May 1, 1893, to July 1, 1894. From this series of observations the mean latitude of the observing station in New York city (which was near the corner of 118th Street and Amsterdam Avenue) was found to be $40^{\circ} 48' 27''.20$. The variation of latitude during the period from May, 1893, to July, 1894, was exceedingly small. This was expected, as Chandler's investigations indicated a minimum variation for that time. The constant of aberration was deduced and gave $20''.46$. The observers at Columbia were Professors Rees and Jacoby and Dr. Davis; and the number of pairs observed were respectively 809, 299, and 666.

The results from M. Fergola's observations at Naples also show that the variation in latitude was to be expressed only in the hundredths of a second of arc, and prove that the greater changes in latitude due to the changes in the position of the earth's rotation axis were, during the period, less than 20 feet. The constant of aberration deduced at Naples was $20''.53$, differing from the Columbia value by $0''.07$. This difference is larger than one had reason to expect, considering that the observatories used the same kind of instruments, the same methods of observations and reductions, and observed the same stars. Later work may bring the results into closer agreement. The value of the constant of aberration seems to be a difficult quantity to agree upon. The Paris conference, composed of the heads of the Astronomical Ephemerides of the United States, France, Great Britain, and Germany, last June adopted the value of $20''.47$, but this value has not been accepted by many astronomers.

The work of reducing the observations made since July, 1894, has been pushed. Through the generous aid of Mr. F. Aug. Schermerhorn, Miss Harpham has been retained for another year. The publication of the memoir on the variation of latitude is now made possible by the gifts of Miss Catherine Bruce and Mrs. Hermann.

The Summer School of Practical Geodesy was held at Osterville, Mass. All the work was done in the field. The class was in charge of Professor Jacoby, assisted by Dr. Davis, and Messrs. Derleth and Kretz.

Rutherford Stuyvesant, Esq., has again generously provided the means for the employment of a computer. Last year Miss Katherine U. Peirce, a graduate of Vassar, was appointed as the Rutherford computer. This year Miss Magill, of Swarthmore College, holds the position.

Professor Jacoby has continued his researches upon photographs of the region surrounding the north pole of the heavens made for him at the observatory of Helsingfors, Finland. Some of these photographs are being studied at the observatory of Vassar College, under Professor Jacoby's general direction, and work upon the others is being prosecuted at Columbia. It is expected that the researches at Vassar will throw considerable light upon the vexed question of optical distortion of photographic lenses. The work at Columbia has for its object a determination of the fundamental constants of stellar astronomy by a method not yet tried elsewhere.

The observatory and instruments remain at Forty-ninth Street. The work in the Astronomical Department and the demands of the times requires that Columbia should be at once provided with an adequate equipment for instruction and investigations in astronomy.

Department of Botany.—Contrary to expectations at the beginning of the summer, the Department of Botany has been transferred entirely to the new site. It was found impracticable to continue the work at the Forty-ninth Street site with any reasonable degree of comfort or safety. While the removal has entailed a large amount of unexpected work upon the staff of instruction, the work of arrangement is now practically complete. The botanical library is shelved in Room 508, in a compact form, where it is much more accessible than ever before; and this room has been assigned to Dr. Small, the curator of the herbarium. The herbarium itself has been temporarily established in Room 502, necessitating some slight modification of the floor space of that room, but rendering the collection much more easy of access than in its old cramped quarters. Here are arranged the higher plants only, from cycads to composites, the cryptogamic collections being housed in Rooms 504 and 508. During the summer an assistant has mounted all the accumulated arrears of the herbarium, amounting to 20,000 sheets, so that, with the exception of the accessions below noted, all the plants are accessible for reference.

The new courses in plant physiology, under Dr. C. C. Curtis, are conducted in Rooms 501 and 503, which have been specially fitted up for that purpose, and a large supply of special apparatus is already in place. Hitherto the limited space at the disposal of the Department has made it possible to offer only taxonomic and anatomical work. With the enlarged facilities and floor space it is now proposed to add successively the other modern developments of the subject, so as to offer well rounded courses in every branch of botanical research.

During the summer additions to the collections have been made by gifts, which may be summarized as follows: Algæ, 200; Fungi, 100; Lichens, 400; Mosses, 140; Sphagna, 170; Spermaphytes, 5,400; or a total of 6,410 specimens, besides a large supply of laboratory materials in fluids.

Professor Underwood spent the summer mainly at Kew, examining types of American plants and incidentally studying the problems involved in the management of botanic gardens. Dr. C. C. Curtis has just issued through Longmans, Green & Company his *Text Book of General Botany*; it is a large octavo of 360 pages, and is intended both for a book of reference and a laboratory guide. Dr. Small has spent the summer in the study of the genus *Eriogonum*, of which he will soon publish a revision. He is also continuing his studies on the flora of the southeastern United States, and has worked up a large number of correspondents throughout the South, so that he is securing complete representations of the flora, in addition to the extensive array of material already possessed.

Of the graduates in Botany of the past year, Dr. Schneider has accepted the position of professor of botany and bacteriology in the Chicago College of Pharmacy; Dr. Tyler, that of instructor in biology in Union College, Schenectady. Mr. A. J. Grout, whose thesis was published during the summer, is in charge of the department of biology at the State Normal School, Plymouth, N. H.; and Mr. P. A. Rydberg, whose thesis will form one of the memoirs of the department, is in a similar position in the Upsala Institute, Brooklyn.

Department of Zoölogy.—All the members of the Department were engaged in field or marine work during the summer. Several of the staff and students, namely, Dr. Strong, Mr. Crampton, Professor Herrick, and Mr. Sumner, were engaged in teaching and research at Woods Holl. The majority of the staff and students, however, made up the party for the Northwest coast, as described below.

Professor Osborn left early in the spring for the West and visited the four localities where collections are being made under his direction for the American Museum of Natural History. The visit included an exploration of the Huerfano Lake Basin in Southern Colorado, which produced important results. At the Central Wyoming camp two superb skeletons of Dinosaurs were discovered. In northwestern Nebraska a very successful exploration was made

in the *Equus* beds of the early Pleistocene, where materials for complete skeletons of the horse and the camel were secured.

Professor Bashford Dean spent two months of the summer in the embryological laboratory of Munich University, reviewing his work upon the development of *Chimera* and *Bdellostoma*, material which he had collected during the Columbia expedition of the preceding summer. After visiting and examining the collecting grounds of the Jurassic at Solenhofen, and examining the Permian fishes of Professor Fritsch, of Prag, and also those at the Universities of Warsaw and Moscow, he went to St. Petersburg to attend the Zoölogical Congress, and was a member of the expedition to the Urals. After examining the unique collections of Russian Devonian fishes, on his return journey he visited the zoölogical museums of Upsala, Stockholm, Christiania, and Copenhagen. He returned by way of Edinburgh to revisit the splendid collection of Scottish fossil fishes in charge of Dr. Traquair. These observations will be of service to the University in the course of lectures which Professor Dean is delivering on the characters and evolution of the great groups of fishes, living and fossil, and will moreover be of value in the future editions of his volume.

During the earlier part of the summer, Professor Wilson went to Beaufort, N. C., where a large amount of cytological material was procured for investigation in the field of fertilization and cleavage. Later he accompanied the zoölogical expedition to Alaska and the west coast. On the return of the expedition to Port Townsend he passed a month in investigating and collecting material for the further study of the Turbellaria. This material, for which he has been searching for several years, has proved of the highest interest. It promises to throw much light on the relationship of Annelids, Mollusks, and flat worms, and is also of great interest in its bearing on some of the general problems of developmental mechanics. In addition to the above, Professor Wilson has prepared and sent to the press a revision of his book on the *Cell*, which appeared last year from the press of the Macmillan Company.

Professor Osborn attended the meeting of the American Association for the Advancement of Science at Detroit, presenting papers before the section of zoölogy upon the evolution of the teeth, and taking part in a joint discussion with Professor Edward B. Poulton, of Oxford, upon the new hypothesis of "organic selection," before the sections of botany and zoölogy. He also attended the British Association at Toronto, presenting papers before the zoölogical

section upon several problems in palæontology, the chief of which was that upon the origin of mammalia.

By far the most interesting event of the year was the second expedition to the waters of the Northwest Pacific Coast and Alaska. As no university funds were available for the purpose, special subscriptions were generously made by Messrs. Schermerhorn and Cutting, of the Board of Trustees, by Charles H. Senff, who has already placed the Department under obligations to him by the gift of its library, by President Low, Professor Osborn, and others. The party consisted of Messrs. Calkins (in charge), Harrington, Griffin, McGregor, and Keppel. Professor Wilson, and Professor Lloyd of the Teachers College, joined the party somewhat later. The University is indebted to Sir William Van Horn, president of the Canadian Pacific Railroad, for the very low rates which enabled the party to travel over that line. Port Townsend was reached upon June 16th, somewhat too early for the collection of marine embryos, which mature rather late at that point. A successful expedition was, however, made to Port Orchard, opposite Seattle, where a rare form of Protochordates was found by Mr. Griffin. The collections in the Puget Sound region were supplementary to those of 1896, and were fairly successful. An early start was made for Sitka, Alaska, the journey offering few chances for zoological work, with the exception of a short stop made at Fort Wrangle. A visit was made to the Muir Glacier, but it was impossible to secure many of the characteristic ice worms, *Dendrobæna*, because of the melting away of the ice bridge which formerly led to the clear ice on the summit of the glacier. Sitka was reached on July 14th, and a small house near the water formed a somewhat cramped but convenient laboratory. Unfortunately the steam launches of the *Pinta*, which had been promised by the United States government, were not available. This fact proved to be a very serious blow to the plans of the party, for the harbor of Sitka, Alaska, was not available for dredging, and the good dredging grounds with sandy bottoms were too distant to be reached by sail boat, although a steam launch could have made the round trip readily in one day. The party thus confined their work to low water collecting, which was very successful, large quantities of beautiful material being secured for the teaching type collection and for special embryological researches in the laboratory. The surface water was found to be wonderfully rich in pelagic fauna. Taken altogether, however, the shore collecting at Sitka proved to be less favorable

than at Port Townsend, with its great stretches of tide flats.* What results would have been accomplished at Sitka with the use of steam launches can only be inferred. From the nature of the shore and surface fauna it seems that great richness would have been found in depths of from five to twenty fathoms.

Owing to limited collecting resources it was decided to return to Port Townsend at the end of three weeks. There the party was met by an unforeseen difficulty. It was in the very midst of the tourist season, and in addition many Christian Endeavorers had taken the opportunity to visit Alaska. The regular boats were overcrowded, and the only chance which offered itself for the return journey was by a vessel put on to meet the rush to the Klondike. Such a vessel left Sitka with the party, August 4th, and took the outside passage, reaching Dixon Entrance to the inside passage on the morning of August 5th. A light fog caused the vessel to beat about at half speed, and its course was not properly located, for soon after four o'clock, when the order was given to go at full speed, the *Mexico* crashed into West Devil Rock, some distance out of the regular course. Two hours later she sank in five hundred feet of water. Perfect discipline was preserved. All the passengers and crew were safely transferred to boats, with hand luggage, and after a hard pull of between eighteen and twenty hours the Indian village of New Metlahkatlah was reached, and the missionary chief, Father Duncan, cared for the party for two days until the arrival of the mail steamer *Topeka*.

This shipwreck was a very severe blow. None of the instruments were saved except the microscopes. All the Sitka collections were lost, and besides this, unfortunately, many manuscripts which had been taken up by various members of the party, including Mr. McGregor's thesis, with all his preparations and drawings, upon which he had been at work for over a year; a complete translation of Hertwig's *Zoologie* by Mr. and Mrs. Calkins; and notes for the second edition of Professor Wilson's work, besides all the collecting notes and observations which had been made throughout the summer. By the members of the party this loss has been severely felt, and is a serious setback to the investigations in progress in the Department. Without either instruments or chemicals, and more or less upset by the shock of the wreck, the party found it difficult to get down again to work. In the region of Port Townsend, Mr. Harrington

* Mr. Harrington was fortunate in securing a complete series of *Entoconcha*, a parasitic mollusk whose development is practically unknown. This was one of the chief objects of the Expedition.

was enabled partly to renew his supply of *Entoconcha*, while Professor Wilson collected some embryological material which has proved to be of very great importance, as settling one of the disputed questions of cell lineage. The members of the party returned to the East by various routes, Mr. Calkins stopping at Port Orchard, where he collected valuable embryological material for the development of a scyphomedusan.

Department of Geology.—The summer school work in geology for the mining engineers was performed this year under the direction of Mr. van Ingen. The work was planned so as to give the class experience, not only with fossiliferous sedimentary strata, but with igneous and metamorphic formations as well. After leaving New York the first stop was made at Little Falls, N. Y., where, beginning with old Archean crystallines, the party passed upwards across Cambrian and Ordovician beds on a very instructive section. Going then to Rochester, they began at the base of the Silurian, and in the Genessee river valley traversed the Paleozoic beds until well up in the Devonian. They were able to gather fossils in abundance at several classic localities. At Marquette, Michigan, they were busied with the peridotites of Presqu' Isle and the complex mixture of dikes and metamorphosed tuffs on Lighthouse Point. Finally, with headquarters at Ishpeming, the folded basin of the Marquette range was traversed to the north, to the south, and to the west. The work proved varied and instructive, and demonstrated the value of working with a guide on instructive and typical exposures. On the return trip Mr. van Ingen did some collecting in Indiana, Ohio, and New York.

Professor Kemp continued field work in the Adirondacks, both for the U. S. Geological Survey and the New York State Survey. In the latter he was assisted by Mr. D. H. Newland, recently Fellow in Geology, and in the former by Mr. Charles Fulton, of last year's class in the School of Mines. Many interesting observations were recorded, which will be worked up during the year.

Dr. A. A. Julien has begun his work with the Department, and will be chiefly engaged in the care of the museum of economic and inorganic geology, and in the rock collections of the laboratory. He has generously added his private collections to the latter, and has thus greatly augmented and improved them.

Dr. Hollick spent the month of July on Block Island, continuing and completing his observations made last year. A large amount of interesting material was collected, representing the pale-

obotany of the Cretaceous formation, and proving conclusively the existence of that formation on the island—a fact which has recently been disputed. The living flora of the island was also examined, and about twenty-five new species were collected, which had not been previously recorded from the locality. Field work in the Cretaceous formation on Staten Island was continued, with the result that a number of Cretaceous plants new to eastern North America, and probably several new to science, were discovered. He was also engaged for the New Jersey Geological Survey, investigating the relation between the geological formations and forestry in that state. He assisted in investigations concerning the antiquity of man in the gravels of Trenton, N. J., in connection with others interested in the matter, and published his conclusions in *Science*, November 5, 1897. Dr. Newberry's *Flora of the Amboy Clays*, edited by Dr. Hollick, was issued the past year by the United States Geological Survey, as a quarto monograph (No. XXVI.) of 260 pages and 58 plates. Dr. Newberry's work on *The Later Extinct* [Cretaceous and Tertiary] *Floras of North America*, was also completed and turned over to the United States Geological Survey for publication last June. This work will likewise be issued as a quarto Monograph of the Survey service.

Mr. John D. Irving, Fellow-elect in Geology, passed the summer in the field with Dr. Whitman Cross of the U. S. Geological Survey, in southwestern Colorado.

The Department has lately received a very complete series of the gold ores of the Johannesburg district of South Africa, from Mr. J. S. Curtis, formerly of the U. S. Geological Survey, but now resident of London, and prominently identified with mining developments in the Witwatersrandt district. The collection illustrates every prominent reef now being mined, and will shortly be suitably displayed. Opportunity is taken to express to Mr. Curtis, in this place, the sincere thanks of the Department. Gifts have also been received from Professor W. G. Knight, Laramie, Wyo., and from Messrs. Beatty, '98, and Sessinghaus.

ALUMNI NOTES

The Alumni Council of Columbia University, consisting of five representatives from each of the three alumni associations—that of Columbia College, that of the College of Physicians and Surgeons, and that of the School of Mines—held its annual meeting at the rooms of the Society of Mechanical Engineers, October 27, 1897.

From the annual reports of the officers and the standing committees, which were presented, the work of the Council during the year is summarized as follows:

Alumni Meetings.—A reunion of Columbia alumni was held on the evening of December 15, 1896, at the rooms of the Fine Arts Gallery. Three hundred alumni were present. Professor J. H. Van Amringe, the chairman of the Alumni Council, presided, and addresses were made by President Low; by Hon. Edward Mitchell, vice-president of the College Alumni Association; by Dr. M. Allen Starr, president of the Physicians and Surgeons' Association; by Wm. Allen Smith, president of the School of Mines Association; by Frederic J. De Peyster, Esq., for the Law School; and by James C. Carter, Esq., Hon. Ellis H. Roberts, and John L. Cadwalader, Esq., representing Harvard, Yale, and Princeton.

At the formal opening of the new boat-house, presented by Edwin Gould, Esq., the Alumni Council coöperated with the Columbia University Union in making the arrangements. The opening took place on the afternoon of May 15, 1897, and was largely attended by graduates and undergraduates. The class boat races were held at that time.

Athletics.—The standing committee on athletics reported through its chairman, A. B. Simonds, Esq. His report especially mentioned the marked improvement in the department of rowing under the able and energetic management of Mr. F. S. Bangs, aided by the efforts of the undergraduates. All the old boating debts have been paid off, and the new year was started free from debt and with a balance on hand. The Rowing Club of Columbia University has been well organized, with membership open to all graduates and undergraduates, Mr. F. S. Bangs being president. The Trustees of Columbia have made an allowance of \$1,200 for the support of rowing. The University and Freshman crews made a most creditable showing on the water last summer, a fact largely owing to the efforts of Mr. Bangs, and to the able services of Mr. J. A. B. Cowles, '83, who devoted many weeks to coaching the crews. In general athletics, the Columbia team made a poor showing at the intercollegiate games, which was somewhat offset, however, by the brilliant victories of the bicycle team. Much is expected from the new gymnasium, but there is a crying need of an athletic field near the University.

Alumni Organization.—The Alumni Association of Columbia University in Colorado has been duly organized, and adopted a constitution at its annual meeting held in Denver, February 6, 1897.

Treasurer's Report.—The treasurer's report may be summarized as follows :

Receipts

Contributions toward expenses of the Council	
from the three associations, \$50.00 each.....	\$ 150 00
Balance from alumni reunions.....	53 09
	<hr/>
	\$ 203 09

Disbursements

For typewriting, stationery, postage.....	\$ 40 84
Balance on deposit in National City Bank.....	\$ 162 25
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Membership of the Council and Officers.—The only change in the membership of the Council during the year was the appointment of Dr. Van Horn Norrie, by the Association of the Alumni Association of the College of Physicians and Surgeons, for the term ending 1902, to succeed Dr. M. Allen Starr. The College and Mines Associations re-appointed those members whose terms expired. The former officers were re-elected, namely: Professor J. H. Van Amringe, chairman; Wm. Allen Smith, secretary and treasurer.

BARNARD COLLEGE

On Saturday, October 16, the corner-stone of Fiske Hall was laid by the donor, Mrs. Josiah M. Fiske, in the presence of the trustees of Barnard College and their invited guests. The ceremony was also the occasion of opening the finished buildings for the first time to the public. The audience assembled in the theatre in Brinckerhoff Hall, and heard addresses by Mr. Joseph H. Choate and the Dean of Barnard College. Save for the addresses the exercises were religious, the Rev. Wm. M. Grosvenor officiating. It was through the influence of Dr. Arthur Brooks that Mr. and Mrs. Fiske became interested in Barnard, as Mr. Choate explained in his address, and it was therefore fitting that the rector of the Church of the Incarnation should conduct the service. The full choir of men and boys from the same church took part, and sang a processional hymn with excellent effect as they headed the march from the theatre to the site of the corner-stone. Documents were placed within the stone, giving the history of the gift and a list of the persons who joined to purchase the land on which the College stands.

In commenting on the changed circumstances of the College since

last year, the Dean said: "I need not delay you to-day with the details of the struggle that has planted the College on this spot sacred to victory. They are all recent, and most of you have given kind attention to many a recital of them. I will only remind you that the worst of the drawbacks of our former condition was not its discomfort or its lack of appeal to the eye, but its air of impermanence. In our old surroundings we inevitably gave, not only to visitors, but to our students, an uneasy sense of the experimental—a sense that if the community really valued the College and found its existence desirable, it would not suffer it to be so unfitly housed. In coming hither we have passed, then, from the tentative to the permanent stage; and these buildings are just so many arguments in brick and mortar in favor of the collegiate education of women. In every case the gift has had a double value, for it testifies to a faith in the work of the College and a sense of its worth to the community."

TEACHERS COLLEGE

Teachers College opens its fall term with all marks of progress and success. The registration has been large, the faculty has been enriched by two strong men, and there are several additions to the teaching staff. Professor James E. Russell, Ph.D., comes as head of the department of psychology and general method, to fill the vacancy caused by Professor Reigart, who resigned to accept the principalship of the Workingman's School of New York City. Professor Russell has filled, for the past two years, the chair of philosophy and pedagogy in the University of Colorado, and is considered, by university men and school men alike, a man of great strength. He was graduated from Cornell University in 1887 with highest honors in philosophy. For six years he was engaged in high school work, three years of this time as Principal of the Cornell University Preparatory School, better known as the Cascadilla School. In 1893 he was sent abroad as special commissioner of the University of the State of New York and European agent of the Bureau of Education, with the purpose of pursuing advanced studies and investigating problems of secondary education in England and on the Continent. While abroad he studied psychology under Ziehen, Külpe, and Wundt, and pedagogy under Rein, Volkelt, Richter, and Paulsen. He took his Ph.D. with honors in Leipsic in 1894, and after some further study of the secondary schools was appointed to the chair of pedagogy in the University of Colorado in 1895. In addition to his unusual opportunities for observation in foreign

schools. Dr. Russell's training has included the practical experience of the department teacher, and of the principal, and wide experience in the training of teachers. As a writer on educational subjects Dr. Russell stands high. Three articles in the *Educational Review* within the past few years have dealt with *German Boarding Schools*, *The University Crisis in Germany*, and *The Training of Teachers*. He has also written in the *School Review* articles on the teaching of German, mathematics, Latin and Greek, natural sciences, history, and geography in German higher schools; as well as papers on the *Scope of Secondary Education* and *College Entrance Requirements in English*; besides an article on the *Extension of University Teaching*, published at Albany, and one on *Secondary Education in New York*, published in the *London Journal of Education*.

Professor Alfred Vance Churchill, of the St. Louis High and Normal School, has been appointed professor of art education. This appointment has given universal satisfaction to those who know Professor Churchill's work and the position he comes to fill. Mr. Churchill is the son of Professor Charles H. Churchill, who has recently retired from the chair of physics in Oberlin College. He received his college education at Oberlin, and afterwards went abroad, where he spent more than three years, making a specialty of drawing and painting. On his return to America in 1890 he was made director of the College Art Department of Grinnell, Iowa, where he remained for two years. During the four succeeding years he taught art history, freehand and mechanical drawing, historic ornament, and design in the Central High School, St. Louis. He is a member of the Painters' and Sculptors' Association of St. Louis, of the Society of Western Artists, and of the St. Louis Artists' Guild. Mr. Churchill is not only a teacher, but a recognized artist. He has not only painted widely in his own country, where he has spent his summers in out-of-door sketching, but also in Holland, and is said to have a fine individual style. His strong and sympathetic treatment of whatever he has in hand has won much commendation.

The Manual Arts Department gains two strong teachers: Mr. C. W. Benns, from the Providence Manual Training High School, whose specialty is metal working; and Mr. E. A. Finch, of the Boardman Manual Training High School, of New Haven, Conn., who will take charge of the wood working.

Other appointments made last spring go into effect this fall: Professor Lloyd, from the Pacific University, as associate professor of

biology; Mr. Paul Monroe, from Chicago University, as instructor in history; Mr. George Philip Krapp, from Johns Hopkins University, as instructor in English. Mr. E. C. Collins has recently been appointed as instructor in German. Mr. Collins is a graduate of Brown University, where he took postgraduate work in German, after which he spent two years in Germany.

Miss Winona Pratt from the Bridgeport, Conn., Training School, and Miss Winifred Fitch, from the Norwich, Conn., Normal School, have been appointed to fill the two vacancies in the grades of the Horace Mann School. This school is filled to overflowing, necessitating the opening of another class of primary grade.

In a material way the outlook for the College is most happy. The use of the Milbank Memorial Building, ready for occupancy for the first time this fall, will greatly facilitate the work of the College and the school. The College closed its fiscal year free of all current debts, and the receipts from donations and earnings were larger than ever before. Eighty thousand dollars have been received in pledges for the permanent fund, and about six hundred books have been added to the Library, the gift of Mr. and Mrs. S. P. Avery, as a memorial of their daughter. These books will be placed in a special alcove and will be known as the Avery collection.

GENERAL NOTES

The following circular letter has been addressed to the alumni and friends of Columbia, in behalf of the Committee on Aid for Students, of which Professor Kemp is the chairman:

"The Committee on Aid for Students, which was appointed by President Low in 1894, completed its third year of work last June, and will enter upon its fourth with the opening of the University at the new site in October. The object of the Committee, it will be recalled, is to secure avenues of employment whereby those students of the University who are in need of aiding themselves during their course of study may do so. The Committee has an office and a Secretary, with regular office hours (two hours daily); and all applications for assistance are duly filed and classified by subjects, so that the individual or individuals best suited to a call may be promptly reached. During the college year just passed we have been able to open the way for our applicants to earn in the aggregate about \$4,000. The number, however, of those desirous of such opportunities is much in excess of the openings; and in bringing the matter again to attention, the Committee earnestly requests

that when any chance presents itself to the alumni and friends of Columbia, they will write to the Chairman or Secretary of the Committee, or to one of its members, so that one of our registered men may present himself. Our students can spare a few hours daily, or in the evening, for almost any line of work requiring special aptitude, intelligence, and reliability. Private tutoring is naturally most sought, but the Committee has also supplied translators in all European languages, and some Asiatic, both from and into English; teachers in evening schools and at Y. M. C. A. branches; readers to invalids; companions for boys, with conversation in French or German; stenographers and typewriters; manifolders with typewriter and mimeograph; draughtsmen; amanuenses; lectures for schools in various branches of science, history and literature; watchers at the polls and inspectors of election; ushers at entertainments, and almost any line of work of not too continuous demands.

“In addition to the above, the Committee has been enabled to secure, through its members from the College of Physicians and Surgeons, the privilege of gratuitous medical advice for students who bring their card of introduction to the specialists of our medical faculty, an arrangement that has proved of very great service. In coöperation, also, with the College Christian Association, the Committee has also answered inquiries about boarding places in the city, and has kept a list of families of whom it has had definite information, and whom it could recommend.

“The removal of Columbia to its new buildings up-town, and the consequent changing of old geographical relations, make us the more anxious that the work of the Committee should not be unfavorably affected in any degree, or even temporarily. The rapidly growing number of graduate students in the various professional schools brings to the Committee an increasing number of applications from men of maturity, who are not only specially qualified, but are specially deserving of interest; and who, from the long period of study demanded of them, are often in need of aiding themselves. In this way that aid can be extended which a self-respecting and independent man can best accept, with due regard to his own proper feelings.”

Dr. Watson L. Savage was appointed advisor in physical training in June, 1897. During his college course at Amherst (Class of '82), Dr. Savage was very prominent in athletics. He played on his class football team; played on the 'Varsity nine as

captain, as pitcher, and in the field; and from his Freshman year was the all-round champion of the college in gymnastic work and field sports. After graduation from the Long Island College Hospital, in 1885, he spent several months on duty in St. Peter's Hospital, and in the Nursery and Child's Hospital; and for a time practiced medicine in Brooklyn and in Cold Springs, New York. Dr. Savage has served as teacher, medical director, and examiner in several New York schools, including Dr. Sachs's School for Boys, and the Berkeley School; and has supervised the building of the Berkeley gymnasium and the Berkeley oval. For several years he has been engaged in the work of physical training in the institution now bearing his name. Dr. Savage served three years on the Amherst Athletic advisory committee and was medical director of the Columbia College Crew for two years. The new director thus brings to Columbia the results of a long and varied experience in physical training.

In the *Evening Post* of October 25, 1897, will be found an interesting discussion of the value of German university degrees in comparison with similar honors in American universities. The writer, who is apparently a student in the University of Berlin, holds that the requirements for the degree of Ph. D. are higher in several American institutions than in the average German university. His points are, first, that it takes a shorter time to obtain the degree in Germany than from any of the reputable American universities; and second, that the average size and value of the dissertations of Harvard and Columbia doctors of philosophy are certainly greater than those of the German universities, with the exception, probably, of Berlin. Indeed, he concludes, "the progress of American universities has been so rapid in recent years, and the entrance requirements have been so largely increased, that the bachelor's degree is actually approaching the German doctorate in essential worth." A few selections from the body of the article, comparing the instruction in political science at Columbia with that given at Berlin, are of special interest.

"Further light on the question will be thrown by a comparison of the courses of lectures in American and German universities. Confining attention to the various studies in the domain of political economy and social science, we may select Berlin as the strongest representative of German institutions.* * * * Of the American schools of political science, it is not easy to select the strongest. Columbia is usually regarded as the best equipped, although several others are but little inferior. Let us compare, then, the courses offered at Columbia and Berlin in political economy.

"At Berlin, Professor Wagner gives three courses, aggregating ten hours, that cover the field of general and theoretical economics, and practical economics, including money and banking, etc. At Columbia, almost precisely the same field is covered by Professor Mayo-Smith's "Historical and Practical Economy," running through three semesters and aggregating nine hours. Almost the only difference is that Professor Wagner devotes more time to agricultural economics, a subject that has as yet received little attention in American schools of political economy. In finance Professor Wagner offers a four-hour course for one semester. Professor Seligman at Columbia covers the same ground, with more discrimination, in a two-hour course running two semesters. He also offers in alternate years a two-hour course on the financial history of the United States.

"In economic or industrial history Columbia stands the comparison very well. It has an introductory course on the economic history of Europe and America conducted by Professor Seligman and Mr. Day, and an advanced course on the industrial and tariff history of the United States by Professor Seligman. The two courses aggregate the same number of hours as Professor Schmoller's "practical political economy," which is nothing but industrial history, and history of Prussia at that—a course valuable to the specialist, but not of great value to the average American student. Professor Meitzen also gives a course on the history of agriculture, but it concerns the early land systems of Europe and other subjects that can have no application to American conditions. The essential forms of land tenure are described at Columbia in Professor Mayo-Smith's historical political economy.

"In the field of statistics, the subject of demography or population statistics is treated at Berlin by Professor Boeckh in a two-hour course, and at Columbia by Professor Mayo-Smith in a similar course. Economic statistics are treated by Professors Meitzen and Mayo-Smith in much the same manner, while the history, theory, and technique of statistics receives attention in both institutions.

"At Berlin, Professor Wagner reads a critique of socialism and Dr. Oldenburg gives its history. The two courses aggregate the same number of hours as Professor Clark's course on socialism at Columbia. Professor Clark's criticism of "scientific socialism" is at least equal to that of any German professor, and it proceeds from the Anglo-Saxon point of view. In a second semester Professor Clark deals with projects of social reform, especially those of American origin. Somewhat similar is Dr. Oldenburg's course on *Sozialpolitik* at Berlin, and Dr. Jastrow reads in addition a course on labor legislation.

"In social science Columbia is clearly in advance of Berlin. Sociology is scarcely recognized at the German universities, but at Berlin Dr. Simmel, privat-docent, offers a two-hour course on sociology and political psychology. This is the nearest approach to a study of the growth and structure of society that one finds at Berlin. Columbia, on the other hand, offers a course on the evolution of society and social institutions, with a review of the principal theoretical writers, and another course on sociological laws. These are both given by Professor Giddings, who also reads courses on crime and pauperism. No such practical study of these problems is made in Berlin.

"Several minor courses are offered at each university—as, for example, rail-

way problems—and all of the professors conduct seminars for the purpose of encouraging and supervising original investigations. The only subject in which Berlin offers superior advantages is agricultural economics, while Columbia is doing much more work in both theoretical and practical social science. Two courses remain to be mentioned. One of these is a course by Dr. Jastrow at Berlin on the literature and methodology of all the political sciences, an introductory course of considerable value to freshmen, which has no parallel in any other German or American university known to the writer. But Columbia offers a course that can scarcely be duplicated in Germany, namely, the abstract theory of political economy given by Professor Clark, one of the acutest and most original thinkers of our day. It is a course that is taken by not more than a dozen or fifteen men, but they are advanced students who can appreciate such a course. Professor Clark's power of inspiring young men to do theoretical work of high quality is evidenced by the writings of such men as the late Dr. Merriam, of Cornell, and Professor Carver, of Oberlin College. But in Germany pure theory has been neglected since the time of Hermann. Only now, as the result of an impulse proceeding from Austria, is theory regaining its place in German economic circles. Professor Dietzel and some of the other younger scholars are doing good work in this line, which is hardly comparable, however, with that of Professors Clark, Patten, etc., in the United States, and Marshall in England. German economists are making valuable contributions to economics in other ways, but the primacy which Germany enjoyed a few years ago has passed away."

It is the duty of a university to encourage research, and it is also the duty of a university to aid in the diffusion of knowledge. Of the original investigations now in progress at Columbia, due mention is made in the Bulletin, as occasion serves; but the share of the University in popularizing the results of research is not so likely to attract attention, although it is constantly growing. In the American History series of Charles Scribner's Sons, three of the five volumes are by Columbia professors—*The French War and the Revolution*, by Professor Sloane; and *The Middle Period, 1817-1858* and *The Civil War and Reconstruction, 1858-1877*, by Professor Burgess. In the new American Citizen series of Longmans, Green & Company, two of the five volumes are by Columbia professors—*American Foreign Policy*, by Professor Moore, and *Elements of Political Economy*, by Professor Seligman. In the series of Writings of the Fathers of the Republic, of G. P. Putnam's Sons, Dr. Cushing is about to edit the work of Samuel Adams. The School of Political Science also does good service in editing, and frequently contributing to, the *Political Science Quarterly*. The works of Professors Goodnow, Mayo-Smith, Seligman, and Giddings, published by the University Press, have been previously mentioned in these pages.

Of the Faculty of Philosophy, Professor Butler is bringing to

completion his Great Educators series, of which seven volumes have already appeared. Professor H. T. Peck has just contributed a volume called *The Personal Equation* to the series of Harper's Contemporary Essays, the first volume of which was Professor Brander Matthews's *Aspects of Fiction*. Professor Sloane and Professor Matthews are members of the advisory council of Mr. Charles Dudley Warner's *Library of the World's Best Literature*; and among the members of the Columbia Faculty who contributed important articles to this work are Professors W. H. Carpenter, Cohn, Gottheil, Jackson, Brander Matthews, Peck, Munroe Smith, and Woodberry.

In the sphere of science Professor Osborn is editor of the Columbia University Biological Series, in which volumes have appeared by Professors Osborn, Wilson, Dean, and Mr. Willey. Professor Britton is associated with Professor Underwood in the issue of a somewhat similar botanical series.

Members of the Medical Faculty are rather averse to writing popular articles, though there is, perhaps, no field of science in which a thoroughly reliable series of popular writings would be in demand, as the public is constantly misled by pseudo-scientific productions intended chiefly to advertise the author. Among the most important works which have been published for the enlightenment of the public upon hygiene matters is the series of little volumes by Professor T. Mitchell Prudden, published by G. P. Putnam's Sons, entitled *Dust and its Dangers*, *Drinking-Water and Ice Supplies*, and *The Story of the Bacteria*.

The members of the Law Faculty have likewise little opportunity, for popularizing the results of their studies. It should be mentioned however, that Professor Burdick acted as legal editor of Johnson's *Cyclopædia*, and that Professors Munroe Smith and Kirchwey contributed largely thereto.

SUMMARIES OF UNIVERSITY LEGISLATION

UNIVERSITY COUNCIL. MAY MEETING.

At the meeting of the University Council held May 25, 1897, the following action was taken :

The President's University Scholarships and the University Scholarships were awarded. The list was published in the BULLETIN

for June, 1897, pp. 189-191. The revised list for 1897-8 is printed in the Directory of Officers and Students, October, 1897.

Arthur Beatty, A.B., Ludwig Bernstein, A.M., Charles Franklin Emerick, A.B., Ernst Freund, J.U.D., and William Clarence Webster, A.B., were recommended to the President for the degree of Ph. D.

The University Council recommended to the President for the degree of M.A., Abraham Howry Espenshade, A.B., Henry Budd Howell, A.B., Emil Alexander Charles Keppler, Ph.B., Horatio Sheafe Krans, A.B., Leffert Lefferts, A.B., Frederic Newton Raymond, A.B., Arthur Frank Joseph Remy, A.B., Samuel Swayze Seward, Jr., A.B., Jessie Frances Smith, A.B., Joseph Russell Taylor, A.B., Helen Isabel Whiton, A.B.

William T. F. Tamblyn, A.B., University of Toronto, 1894, was appointed Henry Drisler Fellow in Classical Philology for the year 1897-98.

Resolved, That the name of no candidate for a degree be printed on the programme of Commencement unless a written report that such candidate has fulfilled all the conditions of graduation be filed in the office of the President by noon of the Saturday preceeding Commencement; the reports on Bachelors of Arts to be made by the Dean of Columbia College, those on the professional degrees by the Deans of the Schools granting them, and those on the degrees of Master of Arts and Doctor of Philosophy by the Secretary of the University Council.

Supplementary Minute.—Under resolutions of the University Council the students named below were recommended to the President for the degree of Ph.D.: Milo Roy Maltbie, Ph.B., Ph.M.; Albert Schneider, M.D., B.S., M.S.; Henry Clapp Sherman, B.S., A.M.; Francis Raymond Stark, A.B., A.M., LL.B.; Frank Leo Tufts, B.S. A.B., A.M.; Ansel Augustus Tyler, A.B., A.M.; Walter Shepard Ufford, A.B., A.M.; Frank Henry Sparks Noble, A.B., A.M., LL.B.

Under resolutions of the University Council the students named below were recommended to the President for the degree of M.A.: Bernard Alexander, A.B.; Helen Culbertson Annan, A.B.; Edwin Atkinson Bayles, A.B.; Elsie Worthington Clews, A.B.; David Cohn, A.B.; Maurice Cohn, A.B.; Thomas Coleman, A.B.; John Howard Dynes, A.B.; Oscar Weeks Ehrhorn, A.B.; Carl Hitchcock Fowler, A.B.; James Joseph Franc, Ph.B.; Carrie Hammerslough, A.B.; Daniel W. Harrington, A.B.; William

Henry Hays, A.B.; Gardner Kirk Hudson, A.B.; Edith Josephine Hulbert, A.B.; Alice Mapelsden Keys, A.B.; William Herbert King, B.S.; Herbert Allan Knox, A.B.; Walter Coluzzi Kretz, A.B.; Alfred Louis Kroeber, A.B.; James Thomas Aloysius Lee, B.S.; Irving Leyman, A.B.; Frederick Montgomery Livingston, A.B.; Mary Dorsey McMurtrie, A.B.; Charles Edward Merriam, Jr., A.B.; William Dunlap Moore, A.B.; Leonard Jerome Obermeier, A.B.; Mabel Parsons, A.B.; William Popper, A.B.; Frank Schlesinger, B.S.; George Cornell Tarler, B.S.; William Ransome Tuttle, A.B., B.S.; Oscar Wagner, B.S.; Chester James Wilcomb, A.B.; Clara Louise Ziegler, A.B.; Christian Charles Herman Zillman, B.S.

Under Rule 10 of the regulations for the degree of M.A. and Ph.D. the following named students were recommended for the degree of M.A.: Frederick Coykendall, A.B.; Alexander Rice McKim, S.B.; Charles Paul Ernest Peugnet, C.E.; Joseph Suydam Stout, Jr., A.B.

The following were recommended, June 9, for the degree of M.A.: James Mitchell, Ph.B.; Louis Halsey Holden, A.B.; James Anderson Laurie, Jr., A.B.; Charles Herbert Scholey, A.B.

UNIVERSITY COUNCIL. NOVEMBER MEETING.

The Council met for the first time at the new site in the Trustees' Room on November 16, 1897.

Rules of order were amended under authority of the amended statutes of the Trustees, so that the regular meetings will occur at 3:30 p. m. on the third Tuesday of November, February, and April, and on the last Saturday in May. Special meetings will be called whenever the business requires such extra meetings.

Rev. Charles Cuthbert Hall, D.D., President of Union Theological Seminary, was received as the representative of the Seminary in place of the Rev. Thomas S. Hastings, resigned.

President Low, Dean Burgess, and Professors Perry and Rees were appointed a committee to revise the regulations concerning the award of the degrees of Master of Arts and Doctor of Philosophy.

Professor J. K. Rees was re-elected Secretary of the Council for the year 1897-98.

Abel Joel Grout, Ph.B., was recommended for the degree of Doctor of Philosophy.

Elizabeth Brown Cutting, A.B., Lester Inglis, B.S., and Edward Kasner, R.S., were recommended for the degree of Master of Arts.

THE TRUSTEES. OCTOBER MEETING.

At the meeting of the Trustees held October 4, the President announced that the new buildings had been occupied that day for the first time, and that the academic year had been formally opened. A tablet commemorating the Battle of Harlem Heights, presented by the Sons of the Revolution, was accepted, and arrangements made for the unveiling of the tablet on October 16. The President and Treasurer submitted their reports, which were ordered printed. The President announced his acceptance of a nomination for political office, and tendered his resignation, which was referred to a select committee for consideration and report.

The office of instructor in chemical philosophy and chemical physics was abolished, and the office of tutor substituted. The President announced the appointment by the Faculty of Political Science of George James Bayles, Ph.D., as prize lecturer for the years 1897-1900, on "the civil aspects of ecclesiastical organizations." The following appointments, made by the President under chapter iii, section 11, of the statutes, were confirmed: Livingston Morgan, Ph.D., as tutor in chemical philosophy and chemical physics; Frederick Spaulding Ward, M.D., as assistant in normal histology; Frederick Montgomery Holbrook, E.E., as assistant in mechanical engineering; Cavalier Hargrave Jouet, Ph.D., as assistant in analytical chemistry; Henry F. Hornbostel, Ph.B., as assistant in architecture.

THE TRUSTEES. NOVEMBER MEETING.

On November 15 the Trustees held their first meeting in their new room. The President announced the death of Professor Charles E. Colby, adjunct professor of organic chemistry, and of Dr E. M. Kitchel, assistant in histology.

Upon the recommendation of the special committee to which the resignation of the President was referred, a resolution was adopted requesting the President to withdraw his resignation; and the President, upon being informed of this action, withdrew his resignation.

The thanks of the Trustees were tendered to the Minister of Public Instruction and Fine Arts of the Republic of France for a gift to the Library of a number of important official publications; to the Edward P. Allis Company, of Milwaukee, for their offer to equip the steam-engineering laboratory of the department of mechanical engineering as a memorial of the late Edward P. Allis; to Mr. J. S. Curtis for a gift to the geological collections of

a set of fifty specimens representing all the important ores of Johannesburg, Africa. A vote of thanks was tendered to Mr. W. Bayard Cutting for his gift of the statue of Demosthenes which has been placed in the gallery of the Library; and to Mr. Charles F. McKim, Dr. George G. Wheelock, and Mr. F. Augustus Schermerhorn, for statues of Euripides, Sophocles, and Augustus Cæsar, which they have presented to the Library, and which will shortly be put in place.

The offices of adjunct professor and tutor in organic chemistry were abolished, and the offices of instructor and assistant were substituted. Marston T. Bogert, Ph. B., was promoted to be instructor for the remainder of the academic year.

The following appointments by the Faculty of Medicine were confirmed: Arthur S. Vosburgh, M.D., as assistant demonstrator of anatomy; Frederic H. Floy, A.B., M.D., as assistant in normal histology; William F. Neuman, M.D., as assistant in bacteriology; and George P. Biggs, M.D., as demonstrator of pathology.

UNIVERSITY PUBLICATIONS

For the purposes of record and information there is published in each number of the BULLETIN a complete list of the recent issues of the various serial Studies and Contributions issued from the University.

STUDIES IN HISTORY, ECONOMICS, AND PUBLIC LAW

[Edited by the Faculty of Political Science.]

VOLUME VIII.

1. The struggle between President Johnson and Congress over Reconstruction. By Charles Ernest Chadsey, Ph.D. Price, \$1.00.
2. Recent Centralizing Tendencies in State Educational Administrations. By William Clarence Webster, Ph.D. Price, 75c.
3. The Abolition of Privateering and the Declaration of Paris. By Francis R. Stark, LL.B., Ph.D. Price, \$1.00.
4. (To be announced shortly.)

VOLUME IX.

English Local Government of To-day: a study of the Relations of Central and Local Government. By Milo Roy Maltbie, Ph.D. Price, \$1.50.

For further particulars apply to Professor Edwin R. A. Seligman, Columbia University, or to The Macmillan Company, New York City.

CONTRIBUTIONS TO PHILOSOPHY, PSYCHOLOGY, AND EDUCATION

The Columbia University Contributions to Philosophy, Psychology, and Education are issued under the editorship of the officers of the Department, and appear at irregular intervals. They are published for the Department by The Macmillan Company, New York City, to whom inquiries and orders should be directed.

5. Hegel's Doctrine of the Will. By John Angus MacVannel. Sometime University Fellow in Philosophy in Columbia College. December, 1897. \$1.00.

CONTRIBUTIONS FROM THE DEPARTMENT OF BOTANY—CONTINUATION OF VOLUME V

No. 113. Some New Fungi, chiefly from Alabama. By L. M. Underwood (1897).

No. 114. An Undescribed *Lechea* from Maine. By E. P. Bicknell (1897).

No. 115. Chromatin-reduction and Tetrad-formation in Pteridophytes. By Gary N. Calkins (1897).

No. 116. Studies in the Botany of the Southeastern United States—ix. By John K. Small (1897).

No. 117. New or Noteworthy American Grasses—vi. By Geo. V. Nash (1897).

No. 118. *Gyrothyra*, a new Genus of Hepaticae. By Marshall A. Howe (1897).

No. 119. The Nature and Origin of Stipules. By A. A. Tyler (1897).

No. 120. Studies in the Botany of the Southeastern United States—x. By John K. Small (1897).

No. 121. Rarities from Montana—i, ii, iii. *Antennaria dioica* and its North American Allies. By P. A. Rydberg (1897).

No. 122. Studies in the Botany of the Southeastern United States—xi. By John K. Small (1897).

No. 123. New or Noteworthy North American Grasses—vii. By George V. Nash (1897).

No. 124. Shrubs and Trees of the Southern States—i, ii. By John K. Small (1897).

STUDIES FROM THE DEPARTMENT OF PATHOLOGY OF THE COLLEGE OF PHYSICIANS AND SURGEONS

The Studies from the Department of Pathology are issued annually or biennially, and consist of reprints of the more important papers published by the workers in the department. Four volumes have already been issued, the last covering the published work of the academic year 1894-95. Volume V. is in the hands of the binder and will be issued shortly.

The studies can be obtained from James Dougherty, 411 West 59th street. Price, \$1.00 per volume.

CONTRIBUTIONS FROM THE OBSERVATORY

Nos. 10 and 11. On the Reduction of Stellar Photographs, with Special Reference to the Astro-photographic Catalogue Plates. On the Permanence of the Rutherford Photographic Plates. By Harold Jacoby.

CONTRIBUTIONS FROM THE MINERALOGICAL DEPARTMENT OF COLUMBIA UNIVERSITY

VOLUME VI

9. Some New Appliances and Methods for the Study of Crystals. By A. J. Moses. *Transactions New York Academy of Sciences*, xvi, pp. 45-57, 1897.

10. Optical Scheme for Determination of the Common Minerals in Rock Sections. By L. McL. Luquer. *School of Mines Quarterly*, xix, November, 1897.

VOLUME VIII

The Geometrical Characters of Crystals—Part i of a text-book upon Characters of Crystals. By A. J. Moses. *School of Mines Quarterly*, April, July, November, 1897.

UNIVERSITY STATISTICS

The following table shows the number and character of the degrees conferred by the University in the academic years 1894-95, 1895-6, and 1896-7.

	1894-5.	1895-6.	1896-7.
Bachelor of Arts	46	54	57
“ “ in College Course for			
Women	1	0	0

Bachelor of Arts from Barnard College	8	18	21
Bachelor of Laws..	36	52	72
Master of Laws	2	0	0
Doctor of Medicine	192	234	40
Engineer of Mines	13	12	7
Civil Engineer.....	22	9	15
Electrical Engineer.....	13	15	27
Metallurgical Engineer	1	1	0
Bachelor of Science..	0	0	12
“ “ Philosophy.....	16	21	1
Master of Arts	22	55	62
Doctor of Philosophy	21	10	16
Honorary degrees	1	2	1
	<hr/> 394	<hr/> 483	<hr/> 331

It will be observed that only 40 degrees in Medicine were conferred this year as against 234 the year before. This falling off is due to the installation of the four-years' curriculum, there being this year no graduating class in the College of Physicians and Surgeons.

The next table shows the registration in the different schools of the University on November 7, in 1895, 1896 and 1897.

STUDENTS

Primarily registered in the College:	1895	1896	1897
Freshman Class,.....	67	99	102
Sophomore Class.....	58	61	85
Junior Class,	52	49	55
Senior Class,.....	52	51	48
Specials,	35	40	22
	<hr/> 264	<hr/> 300	<hr/> 312
Primarily registered in the Law School:			
First-year Class,	126	171	135
Second-year Class,	86	100	139
Third-year Class,.....	60	65	92
Specials,.....	39	4	2
	<hr/> 305	<hr/> 340	<hr/> 368
Primarily registered in the Medical School:			
First-year Class,.....	241	276	222
Second-year Class,	161	158	190

Third-year Class	230	152	151
Fourth-year Class	0	0	143
Specials	23	22	23
Unclassified	54	16	0
	<u>709</u>	<u>624</u>	<u>729</u>
Primarily registered in the Schools of Applied Science :			
First-year Class	123	105	123
Second-year Class	85	88	106
Third-year Class	71	80	74
Fourth-year Class	50	63	80
Graduates	1	3	8
Specials	21	16	13
	<u>351</u>	<u>355</u>	<u>404</u>
Primarily registered under the Fac- ulty of Political Science	58	59	64
Primarily registered under the Fac- ulty of Philosophy	87	82	112
Primarily registered under the Fac- ulty of Pure Science	32	36	44
	<u>1806</u>	<u>1796</u>	<u>2033</u>
Auditors			18
Barnard College*.....			71
Total number of students under the control of the Uni- versity.....			<u>2122</u>

An analysis of the registration figures shows that the body of students entering the University in schools which are graded by classes is considerable less than last year—582 in 1897 as against 651 in 1896. Of these schools the College Schools of Applied Science show a slight increase in the size of the entering class; the Law School and Medical School a distinct decrease. Under these circumstances the increase in the total number of students in these schools (1,813 this year, as against 1,619 last year, and 1,629 in 1895-6) is to be explained as caused by the moving upward of the large classes entering in 1895 and 1896, a process which will probably increase the totals for 1898 and 1899 also.

It is interesting to compare these figures of registration with

* Seniors and graduate students receiving instructions under the various Faculties.

those of Harvard University at practically the same date, October 27, 1897.

	Harvard.	Columbia.
College.....	1809	312
Schools of Applied Science	395	404
Law School.....	537	368
Medical School.....	561	729
Faculties of Philosophy, Political Science, and Pure Science.....	268	291*

Harvard has several departments not represented at Columbia—a dental school, a veterinary school, and an agricultural school. These swell the total number of students at Harvard to 3,778, as against 2,122 at Columbia. But it will be noticed that the chief difference in the figures is due to the great size of Harvard College. Deducting the number of students at each College, and the schools at Harvard not represented here, and the results are surprisingly alike. Harvard has 1,761 graduate and professional students, and Columbia 1,792.

The table below analyses the total figures of registration in the Faculties of Philosophy, Political Science, and Pure Science, showing the number of students taking majors under each department. It includes also the graduate students in the schools of Applied Science. The total figures of registration exceed considerably in each faculty those given on page 78. This is due to the fact that they represent registration at a later date, that they include women students, and that they include students in the Medical School and Law School who are working for higher degrees.

SCHOOLS OF APPLIED SCIENCE

Architecture.....	2
Civil and Sanitary Engineering	2
Electrical Engineering	3
Mining	2
Total.....	9

FACULTY OF PHILOSOPHY

Division of Philosophy:

	Men.	Women.	Total.
Philosophy	35	3	38

*Including the students from Barnard College registered in these faculties.

Education.....	9	5	14	
Psychology.....	6	0	6	
				58
Division of English and Literature :				
English.....	6	1	7	
Literature.....	19	6	25	
				32
Division of Classical Philology :				
Greek	2	5	7	
Latin.....	9	2	11	
				18
Semitic Languages.....	11	0	11	
Music	8	2	10	
Romance Languages	5	2	7	
Germanic Languages.....	4	0	4	
Indo-Iranian Languages.....	1	0	1	
				141

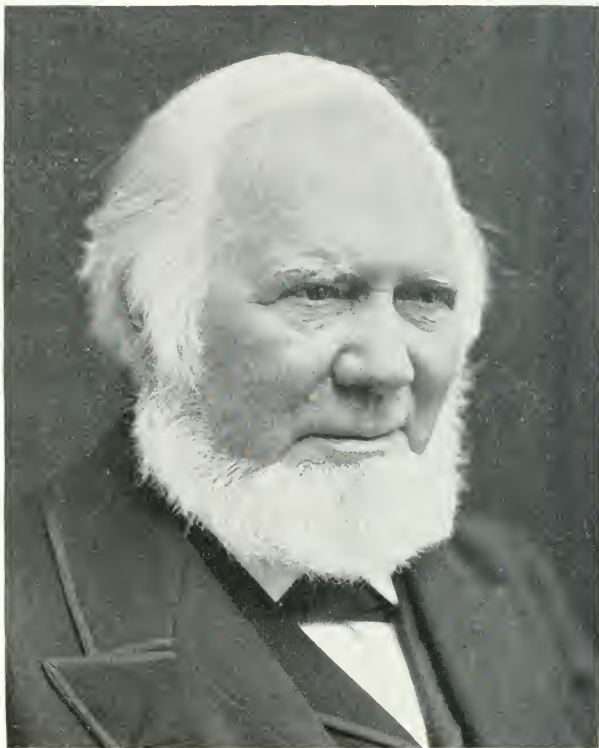
FACULTY OF POLITICAL SCIENCE

Constitutional Law.....	19
Political Economy and Finance	13
Roman Law and Jurisprudence	1
Administrative Law	8
History and Political Philosophy	25
International Law.....	1
Sociology and Statistics.....	15
	82

FACULTY OF PURE SCIENCE

	Men.	Women.	Total.
Mathematics.....	2	6	8
Mechanics	3	0	3
Physics.....	3	0	3
Chemistry	19	2	21
Mineralogy	2	0	2
Astronomy.....	2	1	3
Geology	2	0	2
Zoölogy	13	0	13
Botany	6	1	7
Physiology	3	0	3
Anatomy	1	0	1
			69





FROM HARPER'S WEEKLY.

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COLUMBIA UNIVERSITY BULLETIN

MARCH, 1898

XIX

KING'S COLLEGE IN THE AMERICAN REVOLUTION I

WHEN Dr. Samuel Johnson announced, in June, 1754, the opening of the "College of New York,"* the revolutionary history of King's had already begun. Long before the new President† left his pastoral work at Stratford there had appeared those causes of dissension which, in their later development, were to aid in the estrangement of classmates and to connect closely the early life of the College with the impending struggle of the people. The evil spirit of the controversy of the fifties was perforce imparted to each one of those college men who in '75 followed duty to one side or to the other, and who, living and working for king or for country, showing principle and conscience in conflict with prejudice and interest, gave to the Revolutionary history of King's its full share of pathos, honor, and inspiration.

The prominence of the colleges at Cambridge and New

* This interesting prospectus has been reprinted in *The Origin and Early History of Columbia College*, by George H. Moore, New York, 1890, pp. 43-46; and also in *Columbia College in the City of New York: Charters, Acts and Official Documents*, compiled by John B. Pine, New York, 1895, pp. 69-71.

† Upon Johnson, see especially *Life and Correspondence of Samuel Johnson*, by E. Edwards Beardsley, New York, 1874.

Haven, and the recent establishment of the College of New Jersey, early aroused due local pride and intensified the general recognition of the need, and propriety, of facilities for higher education. As was natural, recourse was had to the lottery; and after some five years of effort a fund amounting to more than three thousand pounds was by law, in November, 1751, entrusted to the control of a board of trustees. The predominance in this board of Church of England men was so pronounced as to occasion rumors that they were planning to secure a charter which should deliver the control of the College to members of their own communion. Under such stimulus there developed abundant sectarian quibblings and general unrest. In the midst of this the vigorous Church of Scotland trustee, William Livingston,* began, in the fall of 1752, the publication of *The Independent Reflector*.† In this, over such signatures as "Timothy Freeheart" and "Shadrech Plebianus," Livingston and his coterie passed from harmless discussion of extravagant funerals and of the inspection of beef to sharp criticism of the religious narrowness of the proposed foundation.‡

The appearance of this formidable attack in the public press naturally brought forth in Gaine's *Mercury* the views of the "College" side, and soon argument was put aside for invective and its attendants. Not only did the spirit of the contestants become unduly embittered, but the question at issue was so widened as to include the whole subject of the established church, the relation of the colonies to the home government, and kindred matters of an import more political than religious or educational. In the controversy even the

* Later a member of the Continental Congress, member of the Constitutional Convention of 1787, and Governor of New Jersey. In general, see *A Memoir of the Life of William Livingston*, by Theodore Sedgwick, New York, 1833.

† Nos. 17-22, 27 and 44 are especially pertinent to the discussion of the College.

‡ See J. Sabin, *Bibliotheca Americana*, No. 34, 452. A copy is in the Lenox Library. Much helpful attention has been given to the writer by the Librarian and his assistants.

pulpit was heard, and the author of *The Reflector* early expressed to a clerical critic his admiration for "his ingenuity in proving him to be the Gog and Magog of the Apocalypse, who have hitherto puzzled all the divines in the world." He reiterated his appeal for equal rights and religious freedom, and the incident privileges, admitting that his own belief in the Scriptures was such that he would "doubtless be honored with martyrdom, did" he "not live in a government which restrains that fiery zeal which would reduce a man's body to ashes for the illumination of his understanding." When, however, he went so far as to assert that "to defend the Christian religion is one thing, and to knock a man on the head for being of a different opinion is another thing," he found himself on too advanced ground and unable to control a single press in the province.

Not only had *The Reflector* failed, but the legislature had voted a considerable appropriation for the proposed institution, and the "College" party was triumphant. The assurance arising from political success was strengthened by the substantial coöperation of Trinity Church,* and in the fall succeeding the opening of the College the charter was approved by the lieutenant-governor and council.† To the objectionable clauses formal dissent was made by Councillors Alexander and Smith; and in the following month, November, 1754, Livingston, scorning a seat in the Board of Governors, effected with much difficulty an arrangement by which Hugh Gaine, publisher of the *New York Mercury*, the organ of the Church of England party, agreed to allot the first part of his paper to the authors of the *Watch Tower*.‡ By these writers the contest was waged again for a full year, their discussions running a long gamut of questions related

* The release by Trinity Church to King's College of a part of the "King's farm," on certain conditions as to the presidency, etc., is printed in *Columbia College: Charters, Acts and Official Documents*, pp. 66-68.

† The text of this document is given in *Columbia College: Charters, Acts and Official Documents*, pp. 10-24.

‡ Mention should be made of an article on "The Whigs of Colonial New York," by Charles H. Levermore, in *The American Historical Review*, I., 238-250.

more or less closely to the opening phase of the Revolution. The author in the end swung round to his chief strain—that “Our Academy, as I have frequently demonstrated, should be clogged with no Tests or Restrictions;” and in his valedictory he proclaimed that, “had I not sounded the Alarm, Bigotry would e’er now, have triumphed over the natural Rights of *British* Subjects; and a Party-College been erected,” threatening to raise his alarm as often thereafter as necessary, “tho’ I flatter myself, that Bigotry will hide its Head in shame, under the Administration of Sir Charles Hardy.”

The exigencies of the French war tended, in a measure, to enforce a shamed silence on local dissensions; and Sir Charles, already in his province, gave assurance to the friends of the College by his influential recognition and by his generous personal gift. Soon the College entered its first home, the corner-stone of which, still preserved in the University Library, was laid by that “*Vir praecellentissimus, Carolus Hardy, Eques Auratus.*”*

With that event, and with the first commencement in June, 1758,† the beginnings of the College had been made. They had been made, plainly, amid significant controversies; and although the political strife continued, the control of the College had been gained by the church party, and the institution had been committed distinctly to a line of policy which was to connect it closely, in its early course, with English ideas and English interests. The troublous times of the first decade rise into importance when considered in connection with the problems and tendencies which in those times became clearly defined and which, thereafter, were to determine much in the history of the College.

Necessarily, there was a minority; and many families of what was to become the “patriot” and Presbyterian party,

*On August 23, 1756. For an account of the corner-stone laying, see *The New York Gazette : or, the Weekly Post-Boy*, August 30, 1756.

†An account of this event may be found in *The New York Gazette : or, the Weekly Post-Boy*, June 26, 1758.

waiving the distasteful exercise of forms for the sake of the unusual opportunities recently acquired, sent their sons to the already well established College. With them were fellow-students from families inseparably attached to the "home" country and its king. Benson and Livingston were the contemporaries of Colden and Van Schaack; Philipse and Beverly Robinson were in college with Troup and Hamilton; and Peter Kissam was a classmate of Marinus Willett, nephew of the renowned agitator. In both sets were young men coming from families whose members were equally distinguished for ability, courage, and public service; and it was inevitable that, when the fateful time should come, the classmates of King's should separate to the opposed ranks, and sacrifice friendship, security, and opportunity in maintenance of principle and devotion to duty. In the manner and results of that separation was much to emphasize the thoroughness of the convictions then controlling the actions of men, the high type of honesty upheld by those prominent in public life, and the chivalric spirit which could understand an enemy whose motives were pure and condone his acts. To those who then went with the "patriot" party this people has never ceased to render increasing honor. The heartiness of such recognition should not, however, in the least degree, militate against rendering equal honor to those who, with honest hearts and sincere purpose, failed in their day to recognize that at Concord, as Lowell has truly said,

*** English law and English thought
'Gainst the self-will of England fought.

From the official records it appears that more than two hundred students had been connected with King's College prior to the Revolution. Of these one hundred and five received the bachelor's degree and one hundred and eight left college before graduation, either as a result of the ordinary processes or "on account of the disturbed state of public affairs." Considering merely the seven score men who received their first degree or who were in college at the

outbreak of the Revolution, further records are available of scarcely one-half the number. Certain types, however, may be presented in this outline to characterize the work of the college men in the literary, political, and military activity of the years of discord. To such service many college men early turned; and in them was centered the real life of King's in the decade following that darkening time when their President, sacrificing dignity for security, abandoned the College and, giving what he called a "longing, lingering view," bade farewell to his "much lov'd York."

Nothing was more theatrical in the Revolutionary history of the College than the closing episode in the administration of the young Fellow of Queen's, who, coming out in '62 as the personal nominee of Archbishop Secker, had, in the following year, succeeded Dr. Johnson in the presidency. Soon becoming widely, and well, known for his academic ability, Myles Cooper early added to his prominence by enlisting his powers and influence on the side for whose service he had had such thorough preparation. His name became a common one in political circles; and his connection with the proposed American bishopric was perpetuated by the author of *McFingal* in his allusion to the time when

Aloft a Cardinal's hat is spread
O'er punster Cooper's reverend head.

In private letters and public print he received ample and unfavorable attention, culminating in April, 1775, in a letter, purporting to emanate from Philadelphia, addressed to Messrs. Delancy, White, Colden, Watts, and Cooper, of New York. In this they were told that they had "defeated the attempts of the Congress to bring about a constitutional reconciliation with Great Britain," and that they had "held up a signal for civil war." Finally to "ye parricides" the parting injunction was given: "Fly for your lives, or anticipate your doom by becoming your own executioner." In spite of such an attack, and only a few days thereafter, Dr. Cooper wrote to a friend that for the sake of the College he

was inclined to stay in "this country of confusion" as long as prudence allowed. On that same night a gang of the progressive party went to the "elegant edifice" of the College, prepared to mete out their own justice to the President. Warned by a college student, now figuring in the President's eye as "an heaven-directed youth," Dr. Cooper made good his escape, while the crowd, as the story runs, was held in check by the harangues of Troup and his young friend Hamilton. Under date of May 10, 1776,* the exiled President gave to the *Gentleman's Magazine* his reminiscence on the anniversary of his unhappy experience, telling how, "unconscious of the dark design," he heard the "voice divine:"

"Awake! awake! the storm is nigh,—
 "This instant rouse,—this instant fly,—
 "The next may be too late:
 "Four hundred men, a murderous band,
 "Access, importunate, demand,
 "And shake the groaning gate."

* * * * *
 That moment, all the furious throng,
 An entrance forcing, poured along,
 And filled my peaceful cell;
 Where homeless jest, and modest mirth,
 And cheerful laughter, oft had birth,
 And joy was wont to dwell.

* * * * *
 They force each yielding door;
 And whilst their curses load my head,
 With piercing steel they probe the bed,
 And thirst for human gore.—

Happily soon sheltered from such thirst aboard the "Kingfisher," Myles Cooper passed from the American life. Nevertheless, the usual commencement was held on May 16;† and on June 1 Rivington's *Gazetteer* contained the fol-

* It has been stated in the *History of New York during the Revolutionary War*, by Thomas Jones, New York, 1879, I., 59, that the President's enforced departure occurred in August, 1775. There is available, however, a letter written in London, July 5, 1775, saying: "The midnight attack on Dr. Cooper is laid before the public in highly finished colors; * * *."

† A notice of this ceremony was printed in Rivington's *Gazetteer*, May 18, 1775, where eight students are named as receiving the baccalaureate degree. The General Catalogue mentions only seven as receiving the degree.

lowing advertisement: "The Examination of Candidates for admission to King's College, will be held there every day next week." This announcement was signed by Benjamin Moore, of the class of '68, who had been ordained by the Bishop of London in 1774, and who, as acting president, was now to have charge of King's College during its last months. The ordinary difficulties of the situation were greatly increased when the evacuation of Boston led to a change of the war centre; and on April 4, 1776, Colonel Mifflin informed the New York Committee of Safety that within ten days the total force in New York would be increased to 12,000 troops, and that adequate quarters would be required. The committee were further informed that there were then very few, if any, students in the College, and that its building was a strong edifice finished in such a manner as to be very little injured by the reception of troops. By the committee it was accordingly ordered, "That the governors of the College in this city be requested to remove the College library, and every other matter in that building which might receive injury, and secure the same in such manner as they may think proper, and to have the edifice left only in a proper state for the reception of troops, within six days from this day, or as much sooner as will be convenient for the governors of said College." Into the details of the use of the building for the succeeding years of war it is unnecessary here to enter. It is stated that the movables were placed in the City Hall,* but it may well be doubted that any of that property was long preserved. It seems an open question whether any volume now in the University Library was ever in the charge of Robert Harpur. Books, however, had given place to arms; and when the troops en-

*The statement has been repeated in *King's College: now Columbia University*, by John B. Pine, being pp. 323-355 of the *Half Moon Papers*, first series, New York, 1897. During parts of 1775, 1776, and 1777, college exercises seem to have been held in the house of the College treasurer. This point has been determined by Professor J. H. Van Amringe, and will be incorporated in a forthcoming article on Columbia prepared by him for *Universities and Their Sons*. The proof of the present article has been read by Professor Van Amringe, and important suggestions have been kindly made by him.

tered the College building the men of King's had already entered both armies. King's had been represented in the Provincial Congress and in the Continental Congress, as well as in the less important political bodies. Her sons had further shared in the contest of political literature preceding the outbreak; and, even before Dr. Cooper had joined Captain Montague, the "Westchester Farmer" and his opponent had become famous in local eyes. In their controversy may be found a fitting prelude to more serious matters.

H. A. CUSHING

(*To be continued.*)

SEMITIC LANGUAGES AT COLUMBIA

I

AT QUITE an early date Oriental learning found a home within our University. While its name was yet "King's College," and only twenty years after a professorship in Oriental languages had been founded at Harvard (1754), the Rev. Johann C. Kunze, S.T.D., was a regular member of its faculty, with the title "Professor of Oriental Languages." The interest attaching to the East, and to the literature of the East, naturally centered around the study of the Bible. The idea that this part of the world might have something of its own to tell us that is worth hearing, is quite a modern one. This theological interest has made, and in many institutions it does still make, all the other Semitic tongues mere handmaids of the Hebrew of the Bible. Before the appointment of Dr. Kunze, there had been some attempt to include Hebrew, at least, as part of the curriculum of the new college. Indeed, in the "Laws and Orders of the College of New York" adopted by the Trustees, on June 3, 1755, Section VI., 1 reads, "The business of the first year shall be to go and perfect their studies in the Latin and Greek classic and to go over a system of Rhet-

oric, Geography and Chronology, and such as are designed for the pulpit shall also study Hebrew." I have been unable to find out whether any student did study Hebrew; though Dr. Myles Cooper, one of the Presidents of the college under the Royal Charter, in his account of the work done in 1773, says, "Hebrew was among the subjects taught by proper masters and Professors." I should think that Myles Cooper himself must have taken some lively interest in such studies. In Benjamin Kennicott's *Annual Account of the Collection of Hebrew MSS. of the Old Testament*, the result of which collection was his *Variae Lectiones*, he writes telling of his successes for the year 1769: "But, as my wishes have extended themselves to every quarter of the world; and as my hopes have been more than answered by the MSS. in Europe and from Africa; so now, I congratulate the public, on the information lately sent me by the Reverend Dr. Cooper, President of King's College, New York, in America. This information is, that Mr. Sampson Simson, a very worthy and benevolent old gentleman, of the Jewish persuasion, living in that city, is in possession of a MS. of very great antiquity, containing the whole Hebrew Bible; which he probably would send to England for my use, if I properly requested it. This I have done accordingly; and I do here express my thanks as heartily to the *President* for his notice, as I shall to the *Possessor* of the MS., if he obligingly favors me with the sight of it." He was obligingly favored with the sight of it; for in his *Dessertatio generalis in Vetus Testamentum Hebraicum* Kennicott remarks, "Quod ad Americam attinet: licet indagaciones, sub auspiciis Spectatissimi Viri R. Melville factae, ibi male cesserint; tamen reverendus M. Cooper, Praeses Collegii Regii *Neo-Eboracensis*, invenit in Eâ urbe MStum Hebraicum penes Samp. Simpson Judaeum; cujus bonâ cum veniâ, transmissus fuit in Angliam Codex, et a me collatus."

John Christopher Kunze was a German. He had come in 1770 from Artern in Saxony—in which place he was born, August 4, 1744—to take charge of a Lutheran church in

Philadelphia. He was a teacher as well as a preacher. He opened a seminary in Philadelphia, and taught the German and the Oriental languages at the University of Pennsylvania. When he moved to New York, he continued to preach and to teach. His connection with the College in New York commenced in 1784. He resigned in 1787, was again appointed in 1792, and was finally retired in 1799. I have come across an interesting account of his work for the year 1794. As he taught only "at such hours as do not interfere with the usual lecture hours of the college," I take it that his work was largely with graduates. He probably got but a little distance beyond the beginnings of Hebrew, and was not overburdened with lecture and class hours. The report runs:

"John Christoff Kunze, S.T.D., is the Professor of Oriental Languages, and assists the Students of Divinity of all denominations in their pursuits to acquire a competent knowledge of the original language of such documents of revealed religion as belong to the Old Testament. He teaches the graduates and under-graduates of Columbia College, and others who apply for the purpose, at such hours as do not interfere with the usual lecture hours of the college. He endeavors to lead his scholars so far in one year, as to enable them to come, by close application to books and private industry, to any degree of improvement without the further oral aid of a teacher; though he offers to all such as will attend him a second year, to read, at a particular hour, one or more of the most difficult books of the Bible with them; as also to acquaint them with the principles of the related languages, the Arabic, Syriac, and Chaldaic, which he considers as highly useful, and to a divine, whose theological knowledge aims at something more than what is commensurate with the general standard of country ministers, as necessary and essential.

"The Professor only expects, that for such an additional hour, a competent number will apply to constitute a class; but for teaching the principles, he considers his appointment as obligatory to admit an individual.

"As he found it difficult to procure a printed grammar in sufficient numbers in this country, and the use of different grammars would retard the progress of the students, he has brought all that is

necessary and essential into the small compass of four sheets, of which each of his hearers, by degrees, takes a copy; and he flatters himself, that his method hitherto has proved more compendious and more advantageous than that generally pursued. Only a few of the principal rules are to be gotten by heart, and the rest are rendered familiar by the practice.

“He connects, from the beginning to the end, the practical exercises of reading and analyzing, with the explanation of the principles, for which purpose he chooses the Psalms of David, out of which he selects those verses which contain all the words occurring in them; which verses amount to no more than 564, according to Opitius and Bythner; and he gives all the words for every task with which the memory is to be impressed. The number of tasks of the grammar, as well as the practical exercises described, amounts to 130. Did the students regularly attend, to complete the whole, twenty-six weeks would be required, allowing five hours to a week; but experience has taught that the course commonly runs through the year. The time hitherto found most suitable is every day, Saturday and Sunday excepted, from twelve to one; and the place, the Professor’s house; and the commencement of the lecture, the end of the spring vacation in June.”

Why Dr. Kunze resigned in 1787 is not apparent. Perhaps his experience had been that of a professor of Hebrew at Harvard more than one hundred years before. Michael Wigglesworth wrote in his day-book, under date of August 29, 1653, “My pupils all came to me this day to desire they might cease learning Hebrew; I withstood it with all the reason I could, yet all will not satisfy them. Thus am I requited for my love, and thus little fruit of all my prayers and tears for their good.” Kunze’s second retirement, in 1799, had a more material reason. It was due to financial difficulties caused by the discontinuance of a grant of £750 from the State, which made it impossible for the College to keep up the professorships of oriental languages, of French, and of law. His library, even, did not find its way into the collection of the College; for his successor—after an interval of many years—relates that he purchased a volume “at the sale of a portion of the library of the Rev. Dr. Kunze (a Lu-

theran clergyman who had been professor of Hebrew in Columbia College)."

II

Between the years 1799 and 1830 I have looked in vain to find that any provision was made to teach Eastern languages. But on February 2, 1830, when a plan had been mooted to found a university in New York, the trustees suddenly took the matter into their own hands and elected the Rev. Samuel Hulbert Turner, D.D., as Professor of the Hebrew Language and Literature. Dr. Turner was a Philadelphian by birth; and when the General Theological Seminary of the Episcopal Church was finally established in New York City in the year 1821, he was appointed to be its "Professor of Biblical learning and interpretation of the Holy Scriptures." In his autobiography Dr. Turner has himself given an account of his work at Columbia:

"The monotonous tenor of my life, for several subsequent years, affords but little worthy of notice. In 1830, while efforts were in progress to establish the New York University, Columbia College thought it expedient to revive her old professorship of Hebrew, which many years before had been held by the Rev. Dr. Kunze, whom I have had occasion to mention, and which had continued vacant since his death. Very much to my surprise, the choice fell on me, and since that time I have enjoyed the title of Professor of the Hebrew Language and Literature in Columbia College. In order to bring the subject of the Professorship somewhat before the public, I delivered, in 1831, three lectures in the chapel of the College. They were afterwards printed in the *Biblical Repository*, vol. i., no. iii., pages 491-530, Andover, 1831, under the title, *Claims of the Hebrew Language and Literature*. They excited very little interest, however, and I doubt whether the numbers of the auditors amounted to thirty on any one occasion, although the lectures were free to all. Scarcely any of the clergy attended; but Bishop Hobart was regularly present. It was my original intention to continue the course, but I abandoned it for want of encouragement. During two or three winters I gave gratuitous instruction to small classes every Saturday at the Seminary. The

first class consisted of Messrs. Richard Cox, Anthony Ten Broeck, and James A. Williams, all of whom afterwards became students of the Seminary and clergymen of our Church. At the termination of their attendance, they kindly presented me with a copy of an edition of the Septuagint and Greek Testament in three very neat volumes in eighteen mo., with the inscription: 'To Dr. Samuel H. Turner, from his first Hebrew class in Columbia College, June 22, 1833.' As pocket-volumes, I have found the work very convenient. After a while, however, when Nordheimer became known as a good Hebrew teacher, I felt it less incumbent on me to devote my time to this object. Since then I have never been required to give lessons in Hebrew, so that the professorship has become a sinecure."

Dr. Turner certainly did not receive as much encouragement at Columbia as a Professor in the Theological Seminary had a right to expect. Had he taught other languages besides Hebrew—and he certainly was competent to do so—he might perhaps, have forged a bond between the two seats of learning, which would have been of advantage to both. He seems, however, to have endeared himself to those who studied under him. We have seen that his first class (which was probably also his last) was thankful to its teacher in kind—a feat which no subsequent class in Oriental languages has tried to emulate. Dr. Turner's name appears in the College catalogues until 1857, though he nominally held his position until his death in 1861. In the year 1857 the Trustees established a "School of Letters," perhaps the first attempt to develop Columbia into a university. One of the subjects of instruction was announced as "Oriental and Modern Languages, as far as possible;" and this announcement was renewed for several years, always with the attendant "as far as possible." This possibility seems not to have presented itself for quite a number of years. Even when, in 1880, a "scheme for instruction to graduates" was reported by the Trustees (June 4) and provision was therein made for instruction in the Hebrew language and literature, a clause was added, "as soon as satisfactory arrangements can be made."

III

It was six years before any decided attempt was made to introduce Oriental learning—so far as the Semitic side was concerned—into Columbia. Another period of almost thirty years had gone by when Dr. H. T. Peck was appointed, June 7, 1886, “Tutor in Latin and Semitic Languages.” On November 1, of the same year, the undersigned was made “Honorary Instructor in the Syriac Language and Literature.” The first attempt was here made to go beyond the rudimentary Hebrew for divinity students. Dr. Peck even included some of the Hamitic tongues in the courses he offered. At the same time Dr. A. V. W. Jackson began to teach Zend or Avestan; and as far back as 1883, Dr. E. D. Perry had been made Instructor in Sanscrit. Here was the nucleus of a Department of Oriental Languages, one of the first really university departments in the new Columbia that was to be. President Barnard had very clearly seen this; and in his Annual Report for 1887 (p. 49) he said:

“A more indirect, and not entirely anticipated consequence of this same System of Fellowship appointments, has been the spontaneous growth here of an incipient School of Oriental Literature and Comparative Philosophy. Among our young scholars selected for distinction as Fellows, it has happened that there have been several whose tastes led them to the study of the Vedas, the Avesta, the Hebrew Old Testament, the Talmud, the Koran, and other books not usually sought except by students of the philosophy of language. These, having become members of our teaching body, as assistants in the classical departments, have voluntarily offered their services to aid others to follow the same difficult path which they had themselves pursued; and thus, without trouble or expense to ourselves, we have become possessed of the germ of a School of Philosophy, which bids fair to reflect signal honor on the institution which has cherished it into life.”

The death of Professor Short in 1886, however, threw the whole burden of the Latin department upon Dr. Peck's shoulders; and, though his courses were announced in the circular for 1887-88, and his name still appeared in the circu-

lar of 1888-89, he had practically given up the work, in order to devote himself to Latin, of which he became professor on November 5, 1888. But the department was now firmly established; and it announced itself as a department by publishing in 1887 a separate "Programme of Courses of Study in Oriental and Hamitic Languages"—the very first of the whole series of departmental circulars. In 1887 some friends of the college agreed to endow a chair of Rabbinical Literature for a period of five years: and on October 7, the undersigned was appointed by the Board of Trustees to fill that chair. Because of Professor Peck's retirement, the whole of the work in the Semitic Languages was given to the Professor of Rabbinical Literature. In consequence of this, his title was changed, June 3, 1889, to "Professor of Rabbinical Literature and Instructor in the Semitic Languages," and on April 4, 1892, to "Professor of Rabbinical Literature and the Semitic Languages."

The appointment of Professor Perry in 1895 to the Jay professorship in Greek brought about a rearrangement of at least one part of the work done in the department. Dr. Jackson took upon himself all the work in both the Sanscrit and the Iranian languages. The Oriental Department is thus at present made up of two divisions; the Division of Semitic Languages, and the Division of the Indo-Iranian languages. In 1884 Mr. Abraham Yohannan was appointed Lecturer in the Oriental Languages. Through this appointment the whole department has been able to come in touch with the modern Orient; for it is able to offer instruction in modern Persian, Armenian, and Turkish, three of the principal tongues spoken to-day in Western Asia. The agreement entered into between the Trustees of Columbia and the Trustees of Union Theological Seminary has been of distinct advantage to the Semitic Department. Students in the department can now attend lectures at the seminary which bear upon the subjects of Hebrew and of Biblical interpretation; while the students of the Seminary who wish to increase their knowledge of the languages and the civilizations cognate to the Hebrew have the opportunity for such study at Columbia.

IV

A glance at the annual announcements of the department will give some little idea of the extent of ground which it has to cover. Babylonian, Hebrew, Jewish, Phœnician, Syriac, Arabic civilizations, in all their various phases, in their influence on the religion, the arts, and the letters of Europe—and, therefore, of our own and of all times—are the subjects for which it must train students and investigators. For it is not the mere philologist alone who stands in need of a knowledge of the languages of the Orient. It is quite impossible to be a student of Oriental literature or of Oriental history without having the ability to handle readily the texts in which this literature and this history have found their expression. The documents in question are all difficult to understand, and often fragmentary in character. They can never be used as a basis for historical presentations, or for a study even of their purely literary form, without first undergoing a rigid textual criticism. And a large part of the material—perhaps, in point of actual amount, the largest part—is still stored up as manuscripts in museums and libraries. The scholar is thus compelled first to edit the texts before he is able to use them for his investigations. The work which the department is called upon to do is thus of a two-fold character—philological and historical. Courses for at least two years are arranged for the philological study of Hebrew, Syriac, Arabic, and the Babylonian cuneiform. Each course, as a rule, runs for a half-year. Only at the end of four such courses is the student able to use the various languages with some ease, and to proceed to original investigations. Ethiopic is considered to be of minor importance. Its literature and its culture have not been among the moving forces of the world. A course of two half-years is, therefore, given in that language every second year. This enables every advanced student to become acquainted with the language at some point of his university career, in a manner sufficient for his study of comparative Semitic linguistics.

An important part of the work in the department is the study of Semitic palæography. Very much of the older material is altogether a literature of inscriptions. The thousands of Babylonian and Assyrian inscriptions are engraven on stone and baked clay. Phœnician documents have come down to us only on stone and metal. The same is true of the three or four thousand Arabian texts (Sabæan, Minæan, etc.), while the Aramæan (Old Aramæan, Palmyrene, Nabatæan, etc.) are on stone and papyrus. Thus, the history of the greater part of Western Asia in its earliest days—if we exclude the Hebrew Bible—has to be arduously put together from the data which we get through a study of palæographic material. The courses in Babylonian cuneiform come entirely under this head; that which remains is divided into three courses, each course covering two half-years. In the first, the old Hebrew, Moabite and Phœnician inscriptions are studied; in the second, the Aramæan; and in the third, the early Arabian.

The higher philological work is done in the Semitic Seminar, which meets on Tuesday evening. Attendance at the Seminar is obligatory upon all students who take their higher degree with a Semitic language as major. The attempt is made to lead the students to a study of the general principles underlying Semitic linguistics. The following is a partial list of the subjects taken up by the Seminar in 1897-98: The Semitic dual, the Semitic plural, inflexion in the Semitic languages, Semitic nominal and verbal formations, sounds peculiar to Semitic speech, etc. As preliminary to this work the Professors of Indo-Iranian and the Semitic languages organized, some time ago, a course on the principles of general linguistics. For several years this course has been given; it has proved a valuable aid in laying the foundation for the more special linguistic work in the various departments.

The Post-Biblical, or so-called Rabbinical, Hebrew also comprises a great variety of subjects: law, philosophy, poetry, history, and literature. The policy of the department

has been to select for the course of each half-year specimens taken from one or the other of these subjects. During the year 1897-98, the first half-year's work has been taken from the poetical, the second half-year's from the philosophical literature. A course of lectures on the literary history of the various periods is also given from time to time.

V

The Semitic Department, it will be seen, appeals to various classes of students. The student of philology will find the beginner's courses sufficient to introduce him to a whole range of philological facts which he can hardly dare to ignore. The specialist in Semitic philology can acquire a broad training in his specialty, upon which he can build his further linguistic studies. The student of the ancient civilizations which go back into the fortieth and fiftieth centuries before our era can become acquainted with the documents upon which our knowledge of those epochs is based. The student of Middle-Age history—of the Crusades, and the Arabic and Turkish influence in the Mediterranean—can get a knowledge of Arabic and Turkish, without which knowledge he must always be dependent upon purely secondary sources. The student of the modern Orient can become acquainted with the various languages spoken there at the present day. The undersigned has, from time to time, offered an additional course in the modern Arabic dialects of Syria and Egypt. The theological student will need, in addition to his Hebrew, a knowledge of Syriac, if he wishes to understand the documents of the early church.

In the courses devoted to Hebrew, the undergraduate can get a grounding in the principles of the language and acquire a familiarity in reading, which will enable him to go into the advanced work of Biblical criticism and exegesis when he enters the Seminary. The courses in the Seminary ought always to be University courses. For this purpose Hebrew should be taken at an early stage of a man's college career. At Columbia the beginning can now be made in the Junior

class. It is hoped by many that this privilege will soon be extended to the lower classes. A student in divinity certainly stands in need of Hebrew as much as he does of Greek or Latin. In the courses which deal with the interpretation of the old Hebrew records, the work is purely philological and historical; and is intended for those students who are prevented from attending the courses offered by the Union Theological Seminary.

VI

The workshop of the department is, of course, the Library. In 1886 there was on its shelves hardly a book which could be of use to the student of Semitic Languages. The very foundations had to be laid; and generous friends of the department have from time to time helped to develop its collections. The most notable case was the gift by the Trustees of the Temple Emanu-El, New York, in 1893, of its extremely valuable library of Rabbinical literature, containing over four thousand books and pamphlets. But the number of the books represents very poorly its real value. It is richer than any library in the United States in Hebrew Incunables, books printed during the fifteenth and the early part of the sixteenth centuries. This library was, in fact, famous when it was bought. The better part of it was collected by Guiseppe Almanzi, a learned Hebraist of Padua; to this were added two small collections, one of which had been made in Permambuco (Surinam). It was offered for sale in Amsterdam in the year 1868; and bought by some members of Temple Emanu-El, with the intention (if I am correctly informed) of giving it to Cornell University. But the Temple, having then a plan in view of creating a Theological School, bought it from the original purchasers. Nothing came of the project; and the wise counsel prevailed of making the library thoroughly useful by incorporating it in the rapidly growing library of Columbia. Later on, an important gift of books on Arabic subjects was made by the late Mr. Alexander I. Cotheal. The undersigned had been

able to interest him in the Semitic Department; and, at his death, his sisters gave a sum of six thousand dollars to further his known wishes in regard to the Columbia Library. Two gifts of money made by Mr. Moore, while a student in the department, enabled us to acquire several sets of valuable periodicals; and Mr. Archer Huntington has sent us a number of valuable Arabic books.

But still more important provision has been made for advanced work in Semitic languages by the formation of a library of Oriental manuscripts. This collection has been built up entirely by contributions from friends outside of the University. The beginning was made by Mr. A. I. Cotheal, who in 1890 gave some 50 Arabic, Turkish, and Persian MSS. In the Temple Emanu-El Library there were 50 Hebrew MSS. To these were added in 1893 138 Hebrew MSS., the gift of the Hon. Oscar Straus and others; in 1895 8 Hebrew and Persian MSS., the gift of Mr. Charles A. Dana and Mr. William Walter; in 1896 30 Hebrew MSS., the gift of Mr. Louis Stern; and in the same year 6 Hebrew MSS. from Mr. William Walter, 30 Hebrew MSS. from Mr. J. N. Hazard, and 17 Hebrew MSS. from Mr. Benjamin Stern. This collection is of great value to the students; it trains them in the most difficult work of deciphering old texts, and of becoming acquainted with the vicissitudes through which such texts pass. The department possesses also a small but excellent collection of Babylonian tablets. Nearly 500 such tablets were presented in 1895 by Mr. Benjamin Stern and others, and 32 by Mr. William Walter. These tablets come from Tell-Lo, and formed part of the archives of one of the temples in that very ancient seat of civilization. Advanced students in Assyrian have thus an opportunity of studying these precious documents from the stones themselves and not from photographs or other reproductions.

VII

Several men who have taken their degree in this department are now engaged in some of our higher institutions of learning:

Max Margolis (Ph.D., 1891) is assistant professor of Semitic languages at the University of California. C. Levias (M.A., 1894) is assistant professor of exegesis and instructor in Hebrew, Syriac, and Ethiopic at the Hebrew Union College, Cincinnati. Wm. R. Arnold (Ph.D., 1896) is curator at the Metropolitan Museum of Art, New York city. A. Yohannan (M.A., 1894) is lecturer in Oriental languages in Columbia University. Hugo Radau (M.A., 1897) is teaching Semitic languages in the General Theological Seminary, New York City.

VIII

The great need of the department is, evidently, an increase in the teaching force. At no university does the duty devolve upon one professor of providing instruction in the whole range of Semitic languages. The individual literatures—Cuneiform, Hebrew, Arabic, Syriac—are each so vast in extent and so great in importance as to demand the complete attention of several instructors. The undersigned feels that the really weighty matters in the study of Semitic literatures can at present seldom be touched upon. The philological work takes up the whole time that can be devoted to instruction, as the work of the students has to commence with the a-b-c of the various languages. And yet philology is, for all who are not special students of the history of language, merely the foundation upon which other buildings are to be reared. Ancient history, ancient art and archæology, ancient culture and ancient religious forms are the things of real weight. All these have to be left at one side. No provision whatever is made for the study of Egyptology. It is certainly to be hoped that in the future means may be found by which the department may be able to give some time and some attention to the great problems in the history of culture which have their origin in the East, for—*Ex Oriente Lux*.

RICHARD GOTTHEIL

PATHOLOGY AND THE DEPARTMENT OF
PATHOLOGY

DURING his first year in the medical school, the medical student is gathering some interesting and very important scientific lore, but he is not studying medicine. If his preliminary education has been deficient, he is obliged to use a portion of his time in learning elementary chemistry and physics. But his chief occupation is gaining an intimate personal acquaintance with the physical and physiological aspects of man, as one member of the animal series, viewed largely from the standpoint of the mechanic, the chemist, and the biologist. The so-called medical student is at the end of his first year simply a student of zoölogy, whose special aims have led him to become familiar with the structure and functions of the highest member of the animal series rather than with, say, sea-urchins or lizards.

At the end of the session he will, if successful, have won great respect for this complex cellular mechanism called the body, which bears in its structure so many records of its slow evolution from lower forms, and which now is poised in such nice adjustment that if natural and favorable conditions could only be secured, for somewhere about three score years and ten, health would prevail. Chemical transformations of the most complex and delicate character would occur without a hitch, the mechanical equipoise would never falter, until at last that intangible link would break which lifts the chemistry and the physics of things which live mysteriously above though not apart from the rest, and the atoms and molecules of the worn-out machine would quietly fall under the sway of the primitive chemical and physical forces, and become dead stuff again. Unhappily, however, conditions natural and favorable to the body's welfare do not prevail. The mechanism or adjustments are faulty by inheritance or become so by abuse; countless factors inimical to the orderly working of the machine secure a foothold in the body; injuries of many

kinds befall, and so enter upon the scene those disturbances of function and changes in structure which we call disease and its lesions. Hence medicine in all its varied phases; hence pathology, which is the science of disease; hence the medical student himself, whose lien upon his title is not until his second year secure.

In the early days, pathology was one of the simplest of those themes pertaining to the human body, with its structures awry and its functions astray, which constitute medical science. The chief aim of the pathologist was to find in the organs of the body after death some more or less constant alteration in size or color or form or structure, which would balance the symptoms manifest in life. The causes of the changes were mostly unknown. But disease was generally believed to be something foreign to the body which had developed within, or had got inside and was playing havoc with the machinery. The practitioner was usually his own pathologist, so that, happily, his diagnosis was not often impeached.

Then came the microscope; and the body, with its cozily disposed viscera, was resolved into elemental structures called cells, which, grouped in great communities (liver, kidney, brain, muscle, bone, *et cetera*), have each acquired such special forms and powers as in nice coördination make up the body's shape and mechanism and functions. So to the morgue and the dissecting table were linked the laboratory and the microscope; and the cells, as individuals, were called upon to give account of themselves, in the hope that haply here, a little nearer, as it seemed, to the ultimate sources of life, the secrets of the body's maladies might be revealed. But with the establishment of laboratories and the discovery of the fruitful and boundless field for research which the microscope had opened, and the necessity for more comprehensive teaching in this special theme, the scope of pathology became too wide to permit its devotees to be practitioners of medicine as well; hence pathologists and institutes and departments of pathology in the medical colleges and hospitals.

The work of the pathologist in early times was, as we have seen, comparatively simple, largely morphological. He examined tumors which had been removed, and told the surgeon whether they were or were not of sinister import to the patient; and the surgeon based thereon predictions, which, for accuracy and acumen, were the wonder of the admiring laity and brought him fame and lucre. The pathologist, not sitting, as did his colleague, at the receipt of custom, was rewarded, good simple soul, for his time and skill and experience, by the approval of his conscience, the gratification of his scientific instincts, and, as his practicing confrère often and ostentatiously reminded him, by "the supply of material for investigation and further discovery." The pathologist busied himself with the phenomena of inflammation, and sat in judgment upon the relative importance of the various cells which this significant process exploits. He collected and studied and tabulated the ways in which the human body may fall below the standard in structure and function. But it was in the autopsy table and in the microscope, with which it is so closely linked, that his work was largely centered; and out of the wide experience thus won, was formed the firm morphological foundation upon which a science with wider outlooks was to build.

Suddenly the horizon of the pathologist widened. A powerful impetus was given to his work by the demonstration that the notion of minute living beings as the cause of widespread and fatal disease, long cherished in out of the way corners, was true, and that by proper technical procedures the knowledge of the invisible world of micro-organisms, man's commensals for weal or woe, could be simply and easily won. It seemed for a time as if the autopsy table and its fruitful lessons would be deserted. Simple morphological diagnosis grew stale; and into the nether world of botany, the science of plants, rushed pell-mell the students of the causes of disease.

It was new ground in the botanical bailiwick which these poachers were turning over, and the botanists willingly left

them to their own devices. So, slowly, creating new methods as new problems arose, and ever with the practical aims of the student of disease and of the arbiter of the physical fate of stricken mortals, the science of bacteriology expanded and flourished. New biological laboratories devoted to these new plants and their congeners in the lower ranks of our earth neighbors grew up largely under the wing of the pathologists, who very soon began to find their botanical foster-child a grievous burden.

If all bacteria and allied micro-organisms were disease producers, the pathologist would, no doubt, regretfully but courageously bear the burden. He would continue to stray on among the pitfalls with which the pranks of bacteria, in the matter of races and species and varieties, make the pathways of biology in these lowly fields both devious and insecure. He would still with patient but dazed eyes peer into the yet unfathomed depths of the chemistry of life, growing more subtle as the problems which it offers become more urgent. Myriads of those bacterial forms would demand recognition, which in the soil for a brief span the custodian of the earth's stock of dead organic stuff, soon render it back fit for service into the ever changing circle of life again. The pathologist would feel it his duty, in the interests of the palate, to listen to the claims of cheese and butter and beer and wine, for research into their special microbes. He would hold some hours apart in which to expostulate with his fellow-man upon the impropriety of drinking sewage polluted water; mayhap in defending Providence against the charge of complicity, when disaster follows sanitary folly.

But it soon appeared that the micro-organisms which cause disease in man are utterly insignificant in number in comparison with the myriads with which the world is peopled and upon which the very maintenance of life upon the earth depends. The incident of incompatibility between the cells of man's economy and a few of the organisms of this invisible world compels the pursuit of medical bacteriology, with the acquirement of so much elementary knowledge of the subject,

as a whole, as may be necessary for the pursuit of the pathologist's special themes. But the pathologist now recognizes, and is gaining courage to insist, that bacteriology, as an independent discipline in the biological domain, with its high significance in the study of life and its wide economic and sanitary aspects, must soon be generally maintained outside of the limits of the medical schools, in which, as an important phase of pure science, long fostered for special ends, it no longer belongs.

But, with the new knowledge of micro-organisms and their relationship to disease, new vistas opened upon many fields where harvests seem to wave in tantalizing richness. At first, the mere physical presence of the micro-organisms in disease seemed of importance, and the star of the morphologist was still in the ascendant. Very soon, however, it became clear that the most important and the most subtle of the damages which microbes inflict when they gain a foothold in the body, are the result of chemical substances which the germs elaborate as they grow, and which, carried everywhere in the system, work havoc, not only with the delicate performances, but also with the very substance, of the cells. Thus chemistry was early called upon to guide the pathologist into fields of physiological and pathological chemistry as yet untrod.

It is to physiological chemistry that the eyes of all students of disease are to-day turned in keenest anticipation; for upon a knowledge of the subtle chemistry of life in health, depends the significance of the facts revealed by the pursuit of the not less subtle, and perhaps more complex, chemistry of the body in disease. We have at length arrived at the conception of the body cells as each a little chemical laboratory, furnishing products of exquisite complexity and delicacy, some of which the body needs for its hourly or occasional use, and others which must be eliminated at the proper time and in the proper way, or serious or fatal self-poisoning may ensue. And when to the subtle chemistry of the body is added the equally subtle chemistry of the living micro-organisms which now and then invade it; and when the usual

orderly performances in each are turned topsy-turvy by associations with the other, it may be easily appreciated that the physiological chemist who, in the new light, conceives sagely of his problems, is hailed with joy by all students of the science of life—perhaps most eagerly by the pathologist, since upon his problems are crowding always the issues of life and death.

The pathologist rubbed his eyes in regretful wonder as to how it would all come out, as he thus found himself, astray from his wonted fields, wandering in hitherto unexplored domains of botany and organic chemistry. But the future had still other offices in store for him. The moment it became clear that micro-organisms, which we can see and handle and kill, are the cause of serious and widespread disease, the problems of sanitation and disease prevention acquired a precision and urgency before impossible. So into this arena, in touch with health officials and private sanitarians in house and hospital, the pathologist now found himself willy-nilly impelled. For he had something in the way of knowledge to offer which was of incalculable value to the well, that they might stay well, and to the ill also, that they might avoid needless complications of ailments already incurred.

Holmes has compared the work of the earlier pathologist to an inspection of the fireworks on the morning after the show. But in later times this functionary finds himself called in council with increasing frequency while the struggle for life is yet in issue, in the hope, often realized, that the armed eye, or the subtle chemistry which he wields, may conjure from tissue, blood, or waste, the secret of the patient's malady and that suggestions for his cure may thus be won. So into the purloins of clinical medicine the pathologist must now frequently divert energies which erstwhile were bounded by the walls of his laboratory. No hospital is complete without him, no private practitioner of pretension to accuracy but must now and then call for his aid, while into the medical curriculum some of his various themes are woven year by year.

It is thus evident that pathology may be pursued as a pure

science—that is, with no other aim than the discovery of facts and their relationship. In this pursuit embryology, comparative anatomy, physiology, physics and chemistry in their most subtle phases, zoölogy and bacteriology, all are drafted into service; while out of the lore of the practicing physician are gathered data suggesting and guiding experiment as to the cause, phenomena, prevention, and cure of disease. But in the fruits of this labor, won in the pursuit of truth for truth's sake alone, stricken mortals the world over may freely share.

As an applied science, pathology offers its resources to the physician at the bedside in diagnosis and in prognosis; and in fatal cases, for his future guidance, confirms or corrects the impression upon which in life the conduct of the case was based. As an applied science also, pathology may throw light into dark corners in the practice of medical jurisprudence, and often stands as the arbiter between disease and accident and crime in the annals of the courts. Finally, the pedagogic phases of pathology, which in the medical schools form an important element in the curriculum, must be as comprehensive in their treatment as the diversity of associated themes requires and the brevity of student life permits.

Pathology may thus be viewed as a pure science or as an applied science, or in its academic aspect, which embraces both. It does not fall within the scope of this paper to recount the triumphs of pathology and the various ways in which these have been made available in the work of the physician and surgeon. But there is hardly a field in science in which during the past decade the achievements have been so brilliant and beneficent. While it is cheerfully conceded that all phases of science are, in the interests of truth, equally worthy of pursuit, it may be safely claimed that in medical schools, in which the definite aim of making good physicians is dominant, all the varied themes of the curriculum are in their practical aspects either closely linked to, or centre in, or are built upon, pathology. In his study of anatomy and physiology the student learns to recognize the norm, any serious departure from which, either in the structure or func-

tion of the body, leads him into the domain of pathology. All the varied ministrations of the physician must be based upon the lore which pathology has taught him. Every good physician must be a good pathologist, if he would win his way into higher activities than those of the nurse or the empirical drug dispenser. So that he who in the medical guild would exalt the office of pathology, need not fear reproach from colleagues who are seeking, or in wider fields have won, distinction, fame, or fortune; because all have built upon the foundation which pathology has laid, and to it all turn for knowledge and for the solution of those obscurer problems of disease which the daily routine evokes.

Twenty-five years ago, pathological laboratories were rare in this country, and such as did exist were usually small corners in the dead-house of some hospital which had more enlightened governors or more money than the rest. In the medical colleges, then largely proprietary, pathology was merged in the chair of the practice of medicine. The student could, if he were enterprising, witness an occasional autopsy, but beyond this, his knowledge of this fundamental theme was derived from lectures, charts, and books.

In 1878, the Alumni of the College of Physicians and Surgeons founded the Laboratory of the Alumni Association, which was largely supported by the Association, the constantly recurring deficits being for a time made up by Dr. Delafield, Professor of Pathology and the Practice of Medicine in the College. A room in the College building was secured, for which, at first, rent was paid to the Faculty of Medicine, which owned it. It was a narrow store on the ground floor, on Fourth Avenue, with a scanty strip of sky just visible through an iron grating, and with scarcely a feature adapting it to the needs of a microscopic laboratory, save that its walls kept out the wind and rain. An ice cream store on one side and a harness shop on the other; the clatter of wagons and horse cars and pedestrians sweeping endlessly along the street in front; the small boy peering curiously between the iron bars of the windows at the strange perform-

ances within, linked science to the busy world in a fashion truly cosmopolitan. The great brewery wagons rumbling heavily along the pavement set every microscope a-tremble; and the frequency with which microscopic observation must for this reason be suspended, while a severe strain upon the temper of the devotee to science, often left him free to muse upon the important rôle which beer plays in modern metropolitan life.

The new work started with the announcement of classes in microscopy. These, at first, were meagerly attended. Then the Faculty officially recommended the courses to the attention of the students, and students and income slowly increased. Later the Faculty began to share with the Alumni Association in the expense involved in the maintenance of the establishment. Just then the significant announcement of the importance of bacteria in the causation of infectious disease began to stir the medical world; and a small corner of the dark and crowded room was partitioned off with second-hand glass sashes—the wreck of a livery stable—and devoted to bacteriology. So small was this apartment that the worker standing at his table with its twilight illumination could touch the walls in all directions, while at frequent intervals he must beat a hasty retreat for a breath of fresh air, lest he risk the ministrations of the coroner. Then, when the medical curriculum was extended to three years and the College moved into its new quarters in Fifty-ninth Street, the themes taught in the laboratory, the minute structure of the body in health and disease—normal and pathological histology we call them—were finally made compulsory, and the laboratory entered upon a new phase in its career.

When at last the College of Physicians and Surgeons became in fact a part of Columbia University, a chair of pathology was created; and the development of a Department of Pathology, together with that of other departments in the College, was greatly stimulated by the wise policy which from the beginning has signalized President Low's administration. This policy, sustained in pathology, as in other phases of

medical science, by the liberality of the Messrs. Vanderbilt, has resulted in the material outfit of the department, to which our attention may now be briefly turned.

The Department of Pathology occupies the two upper fourth and fifth stories of the north wing of the College building, together with a separate suite of mezzanine rooms for photography. The upper floor is about two hundred feet long by fifty feet wide; the lower, about two hundred and twenty feet long by fifty feet wide.

The upper story is devoted to the two large class laboratories for undergraduate instruction—one, for normal histology and pathological anatomy and histology, seating one hundred and twenty-five men at separate work tables; the other, for elementary bacteriology and clinical microscopy, seating fifty men; and to the special bacteriological suite. In each of these large class laboratories is built a small amphitheatre, in which the whole class may be gathered to listen to the explanatory talk which precedes each practical exercise, and where close at hand the students can receive such manipulative or other directions as require demonstration on small objects. One of the amphitheatres is separated from the large laboratory by a sliding partition, on the closing of which the room may be darkened for a lantern demonstration.

Between the large class laboratories, and separated from them by close partitions, is the section devoted to bacteriology. In this is the large general laboratory, in which are tables for the assistants in bacteriology and for special workers; the private room of the instructor in bacteriology; a room for the preparation of culture media; and a room for the chemistry of toxins.

The fourth story, to which the undergraduates are not admitted, is devoted to a pathological museum and cabinet; a large preparatory laboratory; animal rooms; the general laboratory for assistants in pathology and in histology, and for special workers in pathology; a study and private laboratory for the director; six private laboratories for instructors in the department; a special chemical laboratory for clinical

microscopy; a small departmental library; a skylight room for drawing and chart making; janitor's rooms, storage closets, etc.

Regarding the interior furnishing of these various apartments, that most indispensable factor, the light, may first be mentioned. The College of Physicians and Surgeons is fortunate in having enlisted the cordial coöperation of its architect, Mr. Wheeler Smith, in the construction of a building in which architectural traditions have in no particular been permitted to interfere with the scientific requirements. The result is that the high ceilings—fifteen and eighteen feet—and the immense windows permit a flood of light in all, even the remotest corners, of the laboratories, large and small, which is the admiration and often the envy of critical and appreciative visitors. Beneath the sill of each of the large windows is a steam coil, furnishing an upward current of warm air along the panes, so that the window-tables are comfortable in the coldest weather.

The laboratories are lighted by electricity. The fittings and apparatus are such as the practical pursuit of the varied themes requires, and are ample and modern. A series of cold storage compartments, supplied with coils of circulating cold brine from the College plant, permit the preservation of gross specimens awaiting demonstration.

Each of the private laboratories in the department is supplied with a sink having hot and cold water; and is furnished with a large microscope table, having the general form of a library table, with drawers and lockers at each side, with a microtome table, a standing work table with drawers and cupboards, an instrument case, and abundant shelving and lockers.

The department is custodian of over two hundred microscopes, in constant use, suited to the needs of the undergraduates and of advanced workers, of which sixty are furnished with one-twelfth inch oil immersion lenses. The photographic section is provided with the Leitz apparatus and electric lantern for photo-micrography; with an X-ray ap-

paratus and with cameras for copying, for lantern slide work, specimen photography, etc.; and with a projection lantern. A small electric motor is available for grinding bone sections and for other purposes requiring moderate power.

The special library is at present supported entirely by contributions from the workers in the department. Seventy-four current journals, relating especially to histology, bacteriology, and pathology, are on the files; and many of the current text and reference books on these themes are upon the shelves. It is to be hoped that this department may ere long be permitted to share, as other departments of the University already do, in the general library fund.

The academic functions of the department are those which greatly outweigh all others, since each one of the four medical classes receives practical instruction every year in some of the laboratories, while in the second and third years the class has two different courses.

Normal histology, which deals with the minute structure of the normal body, is in most medical schools pursued in connection with either the department of anatomy or that of physiology. But it has, from the beginning, in the College of Physicians and Surgeons, been associated with the Department of Pathology. This association has been maintained largely for convenience in administration. The other separate themes, also compulsory in the four years' curriculum, which are taught in the department, are elementary bacteriology, pathological anatomy, general pathology, pathological histology, and clinical microscopy.

The student commences his normal histology in the first year, the class being divided into two sections, each section devoting two hours, three times a week, for half the college year, to the work. At present the two divisions of the class in normal histology for the first year average about one hundred and twelve men each. Each course consists of about forty lessons. In the second year, normal histology is completed, the student devoting two hours twice a week, for half the year, to the theme. These classes—at present about

ninety-four in each of the two divisions—are somewhat smaller than in the first year, owing to the working of that admirable law of nature formulated in the phrase, “survival of the fittest.”

The course in elementary bacteriology in the second year aims in practical fashion to acquaint the student with various forms of micro-organisms, particularly the bacteria, touches upon the bearing of the subject upon the causation of disease, enters upon the sanitary phases of bacteriology, and, in general, prepares the student, not to be an independent worker or a thorough master of his theme, but an intelligent reader, capable in the following years of adapting his bacteriological knowledge to the problems of pathology. The class is divided into four sections, averaging each about forty-seven men. Each section receives about twenty lessons of two hours each. In the second year the student also secures a glimpse into the field of pathology, by preliminary instruction in small classes on the technique of autopsy making and general methods of studying the lesions of disease.

In the third year the work in pathology largely centres. Twice a week for the entire year each student is present at the demonstrations of gross specimens which show the effects of disease in the body. During the last season about twelve hundred fresh specimens, illustrating various phases of disease, were shown to the class, in addition to the demonstrations from the permanent collection.

In a separate course, occupying for each student two hours on three days of the week, for half the year, about forty lessons altogether, he learns from short illustrated talks, but especially by a series of carefully selected microscopic specimens, one by one, the alterations which, from one cause or another, the body may undergo when the orderly working of things is interfered with. In other words, he is systematically taught general pathology and pathological histology. This class, at present, averages about one hundred and fifty-two men and is divided into two sections.

For the fourth year is reserved a series of chemical, mi-

croscopical, and other delicate tests and examinations which embody most of the practical methods by which pathology directly aids the practitioner in his daily tasks. These clinical tests, under the heading of clinical microscopy, are taught in laboratory exercises, consisting for each student of about twenty lessons of two hours each. The blood, the secretions, excretions, parasites, and various morbid products are here reviewed. The present class numbers one hundred and forty-three and is taught in four divisions.

The rationale of the work of the medical student in this department is this: In his early years in the medical school he is learning the structure and functions of the human body, in themes called anatomy, histology, physiology, and physiological chemistry. In his second year, he touches lightly upon pathology in some of its coarser technical aspects, stepping aside from the regular current of his work to secure a practical knowledge of elementary bacteriology, because in this field botany is closely and significantly linked to medicine. In the third year, he plunges into the heart of his subject, following pathology as a pure science so far as his limited time will permit, partly that he may realize the toilsome and puzzling nature of the pathways along which his vantage ground was reached, and partly that he may not be alone a sharer in past or future achievements but himself a sympathetic and useful participant in the search for truth.

But beyond this, as befits the urgently practical nature of the career upon which he is soon to enter, pathology in its direct application to the routine thought and personal ministrations of the physician receives detailed consideration. Finally, in his last year, the student gathers together a handful of practical clinical tests, through which, day by day, he may win a keener insight into the nature of obscure diseases in individual cases, and secure a firmer grasp upon the measures by which its ravages are stayed.

It will thus be seen that the Department of Pathology in this College teaches each year in practical undergraduate courses of from twenty to forty lessons each, between ten

and eleven hundred men. If the material basis for this instruction were something which, like chemicals, could be estimated and ordered by the pound, the work of preparation for these extended courses would be comparatively simple. But diseased viscera are not quoted in the markets. So, in addition to their academic duties, the instructors in the department of pathology are of necessity pathologists to practicing physicians and to various hospitals and dispensaries in the city, from which, as the only compensation for skill and arduous service, they may derive such demonstrative specimens as can be turned to account in teaching. When it is remembered that each of these examinations involves a careful study and written report of the case to the hospital or dispensary or physician, it will be seen that a large amount of time-consuming and exhausting labor is required of the instructor in pathology before his work of instruction can begin. During the last year, about 1,800 specimens from various sources were examined and reported upon in writing before being added to the temporary or permanent teaching material of the department. In order that the teaching collection may be available for microscopic or other purposes it is also necessary that a careful record should be preserved of all cases, and this also means a goodly amount of skilled clerical work.

The time allotted to the students for the various practical courses in this department, even in the four years' curriculum, is far too short to permit the accomplishment of all that is desirable; so that, in that part of the teaching which involves microscopic specimens, sections and other preparation must be in large measure made ready beforehand and issued to the student at the time of the practical exercises. On the average, between forty-five and fifty thousand microscopic specimens prepared for mounting, most of them stained sections, are issued to the various classes in this department each year.

It will thus appear, from even a hasty review of the routine work of a department of pathology in so large an institution as the College of Physicians and Surgeons, that the administrative detail is large, and that a description of this side of

the work alone might well appear in a popular series on the "conduct of great businesses."

The instructing force in all themes embraced in the Department of Pathology numbers nineteen men. It is the purpose of the department to provide at least one instructor for each fifteen or twenty men in all of the practical undergraduate courses. This does not give as much personal supervision of the work of each student as is desirable, but is as much as can be done with the present conditions and organization. A relatively small share of the time allotted to the themes taught in this department is given to formal talk. A text-book is employed for collateral reading in each case, and from this the student derives such preliminary knowledge as is requisite, and thus commands the larger part of his time for the study of things at first hand. Five special attendants care for the microscopes and other apparatus, for the cleanliness of the laboratories, and for the messenger service. Besides the undergraduate instruction in classes, the department affords each year facilities for the pursuit of special advanced lines of study in bacteriology and pathology, and in general microscopy to physicians, to candidates for the higher university degrees, and to those preparing for expert careers in various lines. The number of such graduate workers has of late been about twenty each year.

When the heartbreaking undergraduate routine instruction is over, when the requirements of the various hospitals and dispensaries and private practitioners in diagnosis and council have been met, when the demands of the permanent collection and its records have been appeased, the workers in the Department of Pathology have thus far made shift to keep the fires at least alight upon the altars of research. Altogether, over one hundred and fifty original papers, embodying the results of special studies, have been published by those connected with the department since the founding of the Laboratory of the Alumni Association. Reprints of these publications, called *Studies from the Department of Pathology*, have of late been gathered into volumes for serial issue.

Volume V. of the series is now nearing completion. The expense involved in the securing of reprints and the binding and issuing of the studies is at present borne by the Alumni Association of the College of Physicians and Surgeons.

The scope of the work in pathology for the future is boundless, and the prospect of beneficent success is most alluring. The greatest danger in a department like this, in which the teaching functions are urgent and dominant, is that the research work may be swamped in academic routine. But it is confidently believed that the maintenance of high standards will be secured in the future, as it has been in the past, by the loyalty to science and the devotion to the department of the men who, year by year, make up its working force.

T. MITCHELL PRUDDEN

EDITORIALS

The strangeness of new surroundings wears quickly away. The University now feels thoroughly at home at its new site, where our life in dignified and spacious buildings, and face to face with noble scenery, grows perceptibly richer, approaching more closely than was possible under the old circumstances the scholar's ideals of dignified seclusion and of noble service. Students are bound together more closely by a score of ties that grow from the new opportunities for intercourse, and increasing recognition of common interests is noticeable among the officers. The work of the University goes smoothly on in its routine, with admirable order and discipline, as if we had been here for years. Indeed, now that we are "settled," the thoughts of all are naturally drawn to the relations of the different parts of the University to one other and the place of each one of us in this new community life of ours. This tendency is now evident in the deep interest felt throughout the University with regard to its new relations with Teachers College.

On January 3, the Trustees of the University authorized the modification of the alliance that has existed since 1893 between Teachers College and Columbia University, and entrusted the University Council with the working-out of the details. At a special meeting of the Council held on January 13, this task was satisfactorily accomplished, and the new arrangement went into effect at once.

The alliance of 1893 was neither close enough nor sufficiently organic to accomplish its purpose. Experience having made this plain, the governing boards of both corporations entered heartily and unanimously into the movement to substitute for the existing alliance a plan of union that, while preserving the corporate independence and separate financial responsibility of the Board of Trustees of Teachers College, would bring its educational administra-

tion into complete harmony with that of the University. This has been accomplished by accepting Teachers College as a professional school of the University, having academic rank with the previously existing professional schools of law, medicine, and applied science. Its functions are the training of teachers and school-officers and the scientific study of education. The President of the University becomes president, *ex officio*, of Teachers College, and the University professors of philosophy and education and of psychology have seats in Teachers College faculty. So long as the workshops of Teachers College are used by students of the School of Engineering, the University professor of mechanical engineering has a seat in Teachers College faculty also. On the other hand, Teachers College is represented on the University Council by its dean and an elected representative.

The adoption of this plan of educational union (with financial independence) places Columbia easily at the head of the universities of the world in the opportunities it offers for the study of education and the training of teachers. Lectures on the history of education and on the principles and practice of teaching are given at many universities, European as well as American; but nowhere else in the world is the entire educational process, from the kindergarten to instruction and research leading to the degree of doctor of philosophy, brought under one scheme of administration and operated with complete unity of principle and of purpose. There could be no more effective illustration than this of what President Eliot years ago called "the unity of educational reform." In addition, the school maintained in connection with Teachers College, for purposes of observation and practice, offers unique advantages for the study of the actual work of teaching, as well as for exercise in actual class-room work under constant and critical supervision.

It may safely be predicted that Columbia will now attract scores of experienced teachers, who wish to devote a year or more to university studies or to the investigation of some special aspect or problem of their chosen profession. Indeed, as President Low said in addressing the Council on the subject, no more important step for the elevation of the teaching profession has been taken in many years.

The forthcoming announcements for 1898-9 will state in detail the courses that are to be offered to students preparing for the work of teaching in elementary and secondary schools, or for some special department of educational work.

The remarkable success attained by Teachers College calls our attention to the scarcely less remarkable growth of Barnard College. In the ninth year of its existence Barnard College has just nine times as many students as it began with, having enlarged the number from 26 to 234. **The Growth of Barnard College** Until the present year its growth went on in the face of many material obstacles, since it may be said, in view of the inadequacy of the old quarters, that every new student added to the discomfort of the whole body. The causes of this progress under difficulties seem to be partly social and partly educational. It is increasingly understood, not only that the reasoning which leads parents to send their boys out of town to college is inapplicable to girls, but that, on the other hand, it is highly desirable to send girls from country homes to a city college. And educationally the growth in this country of the university idea, which has transformed the higher education of men, has at the same time shown the futility of attempting to reproduce so vast a system for women. It is probably true, in the case of the isolated college for women, that the higher its standards the more certainly does it send its graduates to the most available university for further study.

For several years it has been the practice of the BULLETIN to print each spring a detailed list of the publications of each officer of instruction for the preceding year, on the ground that few things are more essential, in the long run, to a clear understanding of the place and power of a university in contemporary life than a careful record of the publications of its officers. **Publications of Officers in 1898** This year we have departed from our previous custom, in that we have grouped these records under departments, with the idea of showing more closely the organized work of our groups of scholars. The result, as our readers will see, is greatly to deepen our sense of University organization and to make more evident the systematic way in which many departments, particularly the scientific departments, are investigating the field in which they work. It also brings out, sometimes in the oddest contrast,—what has always been a striking characteristic of Columbia,—the extent to which men deeply engaged in professional work seek relaxation in literary production far removed from their official fields of instruction and of research.

The following table offers a comparison between the total registration of students during last year on the old site and the first year on the new site :

	1896-1897	1897-1898
College	302	326
School of Law	354	366
School of Medicine	610	737
School of Applied Science	389	420
School of Philosophy	91	115
School of Political Science	64	74
School of Pure Science	48	52
	1,858	2,090

If we add to the total for 1897-1898, sixty-seven students in Barnard College who are receiving instruction in the University faculties and twenty-eight auditors, the grand total for the present year is 2,185. While the increase shown by these figures is not large, the fact that there is any increase in the total number of students in attendance is satisfactory, in view of the greater distance of the buildings from the center of population, and the uncertainty which existed in the minds of many as to whether it would prove possible to effect the removal of the University as announced. A further analysis of the figures, classified with regard to place of residence, shows that of the 1,353 students who are in attendance at Morningside Heights, 648 reside in Manhattan or the Bronx, and 344 others within thirty miles of the college, principally in Brooklyn or Jersey City; 369 come from a distance. Of the 737 medical students about 45 per cent. come from a distance. The percentage in the Medical School is the same as in former years, but the percentage in the other schools shows a slight increase.

Of the students in attendance at Morningside Heights considerably more than one-half come from homes situated outside of New York City (as it was before the first of the year); but a much larger number than ever before have taken rooms in the immediate vicinity of the University. The migration of this class of students from the lower part of the city to the upper part is very marked, and the facts, as a whole, have much significance. The desire which has always existed among students at Columbia, as well as at other colleges, to live in or near the University, has been accentuated—and for obvious reasons, since the student who has always lived at

Migration of Students

home in Brooklyn or Jersey City, now finds that more time than he can afford is occupied in coming and going, and also since the number of students residing at a greater distance has within a short time largely increased. At present, the casual boarding house offers the only haven to students so situated, and no one who has any knowledge of the predilections and needs of students can doubt for a moment that this condition operates to keep away many who desire to enter Columbia. The conclusion is obvious. If the University is to be permitted to grow in proportion to the increased advantages which it offers, provision must be made for non-resident students; and the only way in which such provision can be made satisfactorily is in the establishment of dormitories.

The experience of New York University is in point. Before its removal from Washington Square no tuition fee was charged in the College, and the undergraduates numbered about one hundred and fifty. Upon its removal the tuition was fixed at one hundred and fifty dollars, but at the same time dormitories were provided for the students. As a natural consequence of the comparative remoteness and inaccessibility of the new site of the university, and of the imposition of a fee in place of free tuition, it might have been expected that the number of students would decrease; but the contrary is the fact, the number of undergraduates at the present time being about two hundred. There can be no doubt that this result is largely due to the establishment of dormitories, which have made it possible for many students to attend the University who could not otherwise have done so, and have attracted others who were previously not inclined to enter the University. Assuming that the buildings pay only their running expenses, it is evident that the University benefits largely through its increased income from tuition fees, and that the erection of the dormitories, if regarded simply as a means of adding to the number of students, has proved a good financial operation.

The University Press was incorporated June 1, 1893, its primary object being to provide for the publication of literary and scientific works embodying the original research of the professors and students of the University. Without engaging in the business of printing, it was believed that the Press could, through satisfac-

tory arrangements with printers, publishers, and others, insure the publication of works affording a real contribution to knowledge; and the list of volumes that it has issued (which appears upon another page) indicates that it has achieved a very fair degree of success during its first five years of existence. A considerably greater degree would have been attained, however, if the relation of the Press to the University, and its advantages as a publishing agency, had been more generally understood and appreciated. The publications of the Press form comparatively a small part of the very large contribution which the University has made to literature during the last five years; and the fact is much to be regretted, since through this diffusion of effort the University has derived far less credit than it was entitled to receive from the literary work of many whom it has enabled to become authors, and also since the individuals most affected have failed to benefit by the advantages which the Press can offer. It would seem that a sense of loyalty to and pride in the University might render its officers and students desirous of promoting the reputation and influence of the Press as the officially recognized publishing agency of the University; and while it would be unreasonable to expect writers to make pecuniary sacrifices for a sentiment of this nature, there is certainly no good reason why sentiment should not prevail when, as a purely business matter, the Press is able to offer terms as good as, if not better than, those of other publishing houses. The fact that the Press, while possessing the necessary working capital, does not aim to be a money-making corporation (in the sense of affording any profit to its officers and members), gives it an advantage which is intended to enure to the benefit of its contributors—both in the saving of expense and in the publication of works which are of distinct intrinsic merit but which cannot be expected to be commercially profitable.

In every way it is desired to render the Press as useful as possible to the University and its members, both as a publishing agency and in such other directions as may be suggested. One such opportunity has already offered and has been put to account **The University Bookstore** in the establishment of a bookstore in West Hall. At the request of the Press, rooms were assigned, rent free, by the Trustees of the University for use as a bookstore; and the Press thereupon secured the services of a competent manager, under

an agreement fixing the rates of discount upon the most favorable possible terms to officers and students of the University and of Teachers and Barnard Colleges. The Press was thus enabled to offer not only a convenience—great in proportion to the absence of other bookstores in the neighborhood—but also the means of effecting a very considerable saving on purchases. That these advantages are duly appreciated is shown by the very large amount of business transacted by the store during its first three months, and it is to be hoped that its usefulness may be still further increased by the provision of more adequate quarters.

During the past year the Press has published the UNIVERSITY BULLETIN and has coöperated with the Editorial Committee in the endeavor to give it more of a literary character, while preserving its

The Progress of the Bulletin value as an official document; and, it is believed, with some degree of success. The appearance of the publication has certainly been improved, and it appears to be more widely read. Whenever the demand is sufficient to justify placing the BULLETIN upon a subscription basis—which, it is to be hoped, will be at no very remote date—it should be possible to publish it as a quarterly, to increase the amount of reading matter, and to issue a much larger edition. The latter result is particularly to be desired, as the BULLETIN serves a most useful purpose in giving to graduates and others interested in the University, and to the general public, information which they would not otherwise obtain.

UNIVERSITY NOTES

THE LIBRARY

The additions to the library for the period from July 1, 1897, to February 1, 1898, were 7,496 volumes.

General Watts de Peyster has presented to the library a marble bust of Julius Cæsar copied from the antique. It has been placed, together with a bust of Machiavelli which has been for some time the property of the library, on the catalogue cases in the delivery room. The work of fitting up and adapting the various rooms of the library to their uses is still going on and will soon be completed. Electric lights are being placed wherever they are required, and telephones are now being put in place. The motive power, which

is to be compressed air, for the book lifts and the pneumatic tubes, is expected to be in readiness shortly.

President Low has given, for the library, five thousand dollars for books on continental history, to be expended under the direction of Professor W. M. Sloane. Comprehensive plans for the development of the library in history, which have been under consideration for years, have been taken up anew and will be prosecuted with vigor. It is proposed to expend this sum in two directions: first, in the history of the reformation period, particularly in Germany; and second, in the history of the period of the French revolution.

The Avery Architectural library room has been completed and put in order. The collection of books already belonging to the Avery Library was found to be too large to be shelved in this main room, and some 2,000 volumes or more were placed in the upper section of the room immediately north, the lower part of which is devoted to the Latin and Greek books. Additions, through the generosity of Mr. Avery, are being constantly made; and a considerable body of books have been bound and made available for use.

FACULTY OF APPLIED SCIENCE

Department of Chemistry.—No part of the whole University has benefited more from the removal to the new site than the Department of Chemistry, and nowhere have more earnest efforts been made to take full advantage of the new opportunities. Not only have the courses of previous years been enlarged and developed, but new and important lines of work, both practical and theoretical, have been started and are now in full operation.

This has, of course, been accompanied by many corresponding changes in the staff. As reported in the last number of the BULLETIN, the school has suffered a severe loss in the death of Professor C. E. Colby. His place in charge of the organic laboratory has been taken by Mr. M. T. Bogert, a graduate of the College and of this school, who, ever since his graduation, has occupied the position of assistant and tutor in organic chemistry. During the past two years he has been engaged in some interesting investigations on the relations between the structure of organic compounds and their physiological effects. He gave in April, 1897, a lecture on this subject before the chemical section of the Brooklyn Institute of Art and Sciences, and in May, two addresses before the New York section of the American Chemical Society; and he has just

published the first of a series of papers on this subject, in the *School of Mines Quarterly*. Mr. Bogert is assisted in his work by Dr. C. A. Harper, a graduate of the University of Cincinnati, who has recently returned from Berlin with the degree of Ph.D., obtained after three years' study with Professors Fischer and Gabriel, and after the publication of some interesting researches in the field of organic chemistry. The graduate workers in the Organic Laboratory have formed a quiz class for mutual instruction, with Mr. John Alexander Mathews, A.M., University Fellow in Chemistry, acting as quiz-master. Meetings are held regularly, and the effect is very beneficial, not only in keeping the men thoroughly posted in their subject, but also in inspiring them with greater enthusiasm for original investigation.

An important step in advance was made this autumn by organizing the new laboratory in physical chemistry, presided over by Dr. J. L. R. Morgan, a graduate of Rutgers College (B.Sc., 1892) and of the University of Leipzig, (A.M. and Ph.D., 1895). Dr. Morgan has published some interesting works on theoretical chemistry, notably *Die Bestimmung von Cyaniden auf Electro-metischen Wege* (*Zeitschrift für Physikalische Chemie*, 1895); *The Theory of Solution, and its Results* (John Wiley & Sons, 1897); and *The Principles of Mathematical Chemistry* (Wiley, 1897), a translation from the German of Helm.

There have also been some promotions among the former staff. Dr. Miller, promoted to the rank of instructor, has charge under Professor Ricketts of the assaying and part of the quantitative laboratories. Dr. Vulté, with the same rank, has charge, with two assistants, of the first-year course in general chemistry at the College of Physicians and Surgeons. Mr. C. E. Pellew, with the title of adjunct-professor of chemistry, has been transferred to the University, where, with Mr. Van Gelder, he supervises the work of the College students in general chemistry and, with Mr. S. A. Tucker, has charge of the laboratory of industrial chemistry. Last spring Mr. Pellew delivered a course of four lectures at the American Museum of Natural History on the history, preparation, and properties of alcohol, which were widely reviewed by the daily and scientific press. His *Laboratory Exercises in General Chemistry*, published this autumn, is being used as a text-book by the laboratory students in the College, the School of Medicine, and Barnard College.

Last spring the Faculty made some radical changes in the School

of Chemistry by authorizing students to select optional courses in the respective lines of analytical, organic, or industrial chemistry. The studies for the earlier years are much the same as formerly, with the addition, in the second year, of higher mathematics, and of an introductory course in organic chemistry. But in the third and fourth years the students separate, those taking the analytical option working more particularly under Professor Ricketts; those in organic chemistry, under Mr. Bogert and Dr. Morgan; and the third division, the "industrials," spending most of their laboratory hours in the new and important laboratory of industrial and applied chemistry.

The last course, given hitherto but imperfectly in a very few laboratories in the country, it is hoped to develop to the fullest extent. Few, if any, branches of science have, in the last few years, developed more rapidly; and in none do such opportunities present themselves for interesting, remunerative, and useful employment as in the numerous branches of chemistry as applied to arts and manufactures. The laboratory itself, equal in size to any laboratory in the building, is being carefully and thoroughly equipped, thanks to an anonymous friend of Mr. Tucker, with steam evaporators, filter-presses, stills, centrifugals, drying chambers, photometers, and other technical apparatus of the latest and best models.

During the last term the students have been engaged in the manufacture of pure chemicals from the raw materials, as far as possible on a fairly large scale, so that the products can be utilized in other laboratories. Next term they will take a thorough and extended course on the textile fabrics, dyeing and calico printing, and, if there is any time left, will do practical work on fermentation and distillation. During the next year instruction will be given on water and sewage filtration and purification, electro-chemistry, and, if possible, on the manufacture of sugar, leather, and the products of petroleum.

But the instruction in this department is not confined to the laboratory or the lecture room. It is supplemented by careful and systematic visits to factories, where the laboratory operations can be studied as conducted on a commercial scale. During last June all the second and third year students in the School of Chemistry were conducted by Messrs. Pellew and Tucker through some twenty different manufacturing establishments, and great pains were taken to see that they understood the various processes examined. Last term, owing to the necessity for pushing the laboratory work, only

one visit was made, to the beautiful new laboratories of Messrs. Schieffelin & Co., where Dr. W. J. Schieffelin, a graduate of the school, took the greatest pains to interest and instruct the students. But for the coming term arrangements have been made for our men to study in the factories every step, in the textile fabric industry, that they take up in the laboratory. It is only proper to acknowledge here the great courtesy and kindness shown to the instructors in this department, not only by former graduates of the school, but also by manufacturers and chemists who have had no previous connection with Columbia.

It is hardly necessary to remind our readers that all these developments could not have taken place without the splendid gift by the Havemeyer family of the great Havemeyer Hall. It is a waste of words to try to describe the noble lecture-room, the largest in the University; the Chemical Museum; the five large laboratories, qualitative, quantitative, assay, organic, and industrial; the many small laboratories; the department library; and the various studies and private laboratories of the various officers. It would be wearisome to go into the details of the equipment, more complete and more elaborate than those in any other laboratory building in the world, or to dwell upon the hitherto unhopèd-for comforts and conveniences now at the service of every student.

And yet, "man never is but always *to be* blessed." In consequence of the occupation of the upper floor of the building by the Architectural Department, the students in general chemistry have to work in the qualitative laboratory, which, in consequence, is unduly crowded; while the basement, in some respects the handsomest portion of the hall, is almost entirely devoted to the Metallurgical Department. Delighted as we are with our present quarters, we still look forward eagerly to the time when, devoted entirely to chemistry, Havemeyer Hall will take its stand not only as almost, but as absolutely, the most perfect and complete laboratory building in the world.

Department of Metallurgy.—Believing that it will be found practicable to equip the metallurgical laboratory with a number of furnaces in which the chief igneous metallurgical processes can be studied, and with apparatus for carrying on the wet processes, many new graduate courses have been proposed for 1898-9, which are to consist in the main of experimental work with these metallurgical appliances. At the same time, other graduate courses are proposed, which consist chiefly of experimental work, carried out at

metallurgical establishments, on the processes actually in use there on a commercial scale, and in many cases supplemented by further investigation in the analytical and metallurgical laboratories of the department.

FACULTY OF PHILOSOPHY

At the Cleveland meeting of the Modern Language Association of America, held in December, 1896, the retiring president, Professor Calvin Thomas, was directed to appoint a committee of twelve, whose duty it should be to investigate and report upon the subject of preparatory requirements in French and German. The appointment of this committee was ordered in response to a communication from the National Educational Association, which is endeavoring to bring about, for the country at large, a somewhat greater uniformity in preparatory standards and in modes of defining a candidate's fitness for college work. The Modern Language Association was invited to put itself on record, as counsellor of the Educational Association, with respect to the preparatory study of French and German; to agree upon and define certain grades of preparation, the meaning of which could be definitely understood by teachers everywhere; to draw up model courses; and to make such practical suggestions as might promise to be useful. This committee, of which Professor Thomas is chairman, and Mr. E. H. Bab-bitt is secretary, has done a large amount of work during the past year, chiefly in the collection of facts, opinions, and suggestions pertaining to the teaching of French and German in the secondary schools of the United States. At the recent meeting of the Modern Language Association in Philadelphia, the collected returns from several hundred circulars were given to the committee, but no final report was made. It was found that several important questions were in need of further investigation. The committee, therefore, decided to report progress and to ask for further time. During the coming year the work of the committee will be prosecuted by a number of sub-committees, and it is hoped that the general committee will be able to present a final report at the next meeting of the Association. One of the sub-committees is to report upon recent contributions to the methodology of modern language teaching; a second will report upon the question of teaching French and German in grades below the high school; and a third will draw up model courses of different lengths, and define the grade of attainment to be aimed at in each. It is hoped that a final report may be presented which will exert great influence in elevating the

standard of modern language work throughout the entire country.

Professor W. H. Carpenter, on the evening of January 13th, delivered an address before the Deutscher Gesellig-Wissenschaftlicher Verein, the principal German literary-social club of New York, on "Der deutsche Sprachunterricht an den amerikanischen Universitäten," with especial reference to conditions of German instruction at Columbia.

The total registration, this year, under the Germanic Department is 200; deducting for repetitions, which occur principally in graduate work, there is an actual total of 177 students. Fifty Freshmen in the College take the prescribed elementary course; twenty-seven are registered in elective courses. In the other classes, electives are taken by forty-three Sophomores, seventeen Juniors, and eleven Seniors.

In the graduate courses there are sixteen candidates for a higher degree, five of whom are taking their major subject under this department, two being candidates for the master's, three for the Doctor's degree. The students thus specializing under the Department hold degrees from the University of Wisconsin, Vanderbilt University, Brown University, the College of the City of New York, and Columbia. The Germanic Seminar has a membership of seven.

At the meeting of the American Psychological Association and other societies devoted to the natural sciences, held at Ithaca during the Christmas vacation, Columbia was well represented. Professor Cattell, Dr. Farrand, Dr. Boas, Mr. Strong, and Mr. Franz were in attendance at the meeting of the Psychological Association, of which Dr. Farrand was reelected secretary. Professor Cattell presented papers before the Psychological Association and the section of Anthropology, and represented psychology in the discussion on "The Biological Problems of To-day" before the Society of Naturalists. Mr. Franz presented a paper before the Psychological Association and Dr. Boas one before the section of Anthropology. The affiliated societies will meet next winter at Columbia University.

As unauthorized accounts of the mental and physical tests made on the students of the College in the Psychological Laboratory have found their way into the daily press, it may be well to state that a detailed statement of the results of the first one hundred measurements was published in *The Psychological Review* for November, 1896. A reprint of this paper will be sent by offi-

cers of the division of Philosophy, Psychology, and Education to those who may wish to use such tests in colleges and schools. Professor Cattell has undertaken to give a more popular account of the work in the *Atlantic Monthly*. The students first tested in 1894 will this year be re-tested as seniors, and it is expected that the results will be of value both to the men themselves and to science.

A number of leading men of science in America and in Great Britain have consented to contribute volumes to "The Science Series," the publication of which will be begun at once by Messrs. G. P. Putnam's Sons, under the editorship of Professor Cattell. Among the volumes to be issued first are the following: *The Stars*, by Professor S. Newcomb; *The Earth as a Planet*, by Professor C. A. Young; *Physiography—Forms of the Land*, by Professor Davis; *Earth Structure*, by Professor Geikie, F.R.S.; *Volcanoes*, by Professor Bonney, F.R.S.; *Earthquakes*, by Major C. E. Dutton; *The Measurement of the Earth*, by President T. C. Mendenhall; *The Animal Ovum*, by Mr. F. E. Beddard, F.R.S.; *Physical Geography in its Relations to Animal and Plant Life*, by Dr. C. Hart Merriam; and *Sex, Growth, Old Age, and Death*, by Professor Charles S. Minot.

Both students of philosophy and general readers will welcome the English translation of Dr. Kronenberg's *Kant: sein Leben u. seine Lehre*, which is announced by The Macmillan Co. for early publication. The intrinsic importance of Kant's thought and the present world-wide revival of interest in the man and his writings, make this translation especially timely. Dr. Kronenberg's *Kant* was published in Germany about a year ago, and at once gained general recognition as the best book to be put into the hands of general readers and beginners in the study of the Kantian philosophy. It is simple and clear in style; and includes a sketch of Kant's life and intellectual development, an admirably succinct and well-proportioned outline of his philosophy, and an analysis of his present influence. The book is to be translated under the supervision of Professor Butler, who will also contribute the introduction.

Two classes for the reading of Greek at sight have been formed by Dr. Young, one in Xenophon's *Memorabilia*, the other in the *Anacreontics* and selected dialogues of Lucian.

Next year Dr. Young will offer for the first time a course in the Greek Christian Fathers. It is intended that this course and that in the New Testament shall hereafter be given in alternate years.

The Parsi High Priest, Dastur Jamaspji Minocheherji, of Bom-

bay, has sent as a present to Professor Jackson a set of rare photographs of the new fire temple, Atash Behram, that was dedicated in India last October. One of the photographs represents the sanctum sanctorum, in which the eternal fire is kept burning. None but the priests are allowed to enter this shrine after its dedication.

FACULTY OF POLITICAL SCIENCE

Dr. William Z. Ripley is engaged upon the preparation of an exhaustive bibliography of the anthropology and ethnology of Europe, to accompany his series of articles on the racial geography of Europe. This bibliography, now in type, will include about fifteen hundred titles, and will be published by the Trustees of the Boston Public Library in a special bulletin. Leading authorities in Europe have coöperated in the work, to make it at once complete and accurate. The system of Dr. Minot, so successfully employed by Professor Wilson, has been adopted, as best combining compactness and simplicity. To the list by authors will be appended a full subject-index. Though primarily concerned with the anthropology of the modern populations, on which it will be exhaustive, the best archæological work will be fully covered. The development of the problem of the Aryans, and the presumptive origin and dispersion of their culture will be specially treated.

FACULTY OF PURE SCIENCE

With the beginning of the present academic year, in the new life of the University at its new site, there may be said to begin also a new period in the history of the School of Pure Science. Established in 1892 with a representation of three departments only, this school now comprises twelve different departments, has a corps of over seventy instructors, and offers upwards of one hundred and twenty graduate courses of study. Although this school began from its inception to conduct graduate work, the history of the first five years of its existence is largely a history of organization, development, and adjustment. It was essential during these years to perfect a working scheme of correlation and equivalence of major and minor courses of study; to define the interrelations of the different departments of the school; and to determine its status in the university system. Most departments of the school also labored during these years under the disadvantages of inadequate quarters, which, in some cases, were so difficult of access that no one not animated by the ardor of science or the necessities of business would ever

undertake to visit them. Now, however, all these obstacles have been removed. The administrative rules and regulations have been agreed to, the status of the school is clearly defined, and the ampler quarters and equipment of the new site inspire in instructors and students alike a zeal that cannot fail to produce good results in the immediate future.

Readers of the BULLETIN who do not possess the time or inclination essential to the collection of statistics may gain a general idea of the work of the school from the following table, showing the number of graduate and undergraduate courses offered by, and the number of instructors in, each department. It should be remarked, however, that this table does not give a complete idea of the activities of the several departments, any one of which gives collegiate or professional courses of study not included in the announcement of the school:

DEPARTMENT	NUMBER OF INSTRUCTORS	NUMBER OF COURSES OFFERED	
		GRADUATE	COLLEGIATE
Mathematics	7	7	2
Mechanics	4	16	2
Physics	12	30	1
Chemistry	16	19	6
Mineralogy	3	7	3
Astronomy	3	3	3
Geology	4	6	2
Zoölogy	6	9	3
Botany	4	4	8
Physiology	4	5	...
Anatomy	10	11	4
Bacteriology	2	2	...

Somewhat more than half of the courses offered are now given annually, so that the entire list of courses may be given in the time usually necessary to attain the doctor's degree. In addition to the graduate courses enumerated in the table three others are offered by Dr. Franz Boas, lecturer in physical anthropology. Reference may be made also in this connection to an innovation, to be seen in the Announcement of the School for 1897-8, whereby many graduate courses of study are made available to properly qualified auditors. This it is hoped will stimulate a wider interest in science and scientific work. The distribution of these courses in the different departments is as follows: in Mathematics, 8; in Mechanics, 11; in Physics, 1; in Astronomy, 4; in Geology, 4; in Zoölogy, 9.

A general idea of the growth of the School, as well as an idea of

its interrelations with other schools of the University, may be gained from the following statistical table included in the Dean's report for the year ending June 30, 1897.

	1892-3	1893-4	1894-5	1895-6	1896-7
Graduate students registered in School of Pure Science . . .	13	25	26	28	36
Graduate students registered in other Schools	3	4	5	8	18
Undergraduates from Columbia College	37	29	14	24	24
Undergraduates from Barnard College . . . . .	...	...	...	...	9
Students from School of Medicine . . . . .	...	...	3	8	22
Students from School of Applied Science . . . . .	...	...	9	10	9
Special students (graduates and undergraduates)	6	9	9	7	31
Totals	59	67	66	85	149

Along what lines the School will develop most rapidly in the future it is impossible to foretell. The great laboratory facilities for studies in the experimental, the natural, and the biological sciences, and the remarkably rapid growth of these in recent times, may not unreasonably be expected to give a strong bias in favor of such studies. On the other hand, there are indications that advances in many branches of these sciences can be made only through coöperation with the mathematico-physical sciences; so that cultivation of the latter is not unlikely to receive a noteworthy impetus from the higher developments of the former.

The Department of Botany has nearly completed its arrangements for laboratories for the year. A dark room that will serve alike for an experimental room for physiological work and for photographic purposes has been cut off from one end of the lecture room by a partition. Complete darkness and the impossibility of indirect diffusion has been effected by having floors, fixtures, and all projecting portions painted a dead black, and by providing a vestibule entrance. Apparatus for a limited number of students in experimental plant physiology has been purchased. The more important pieces of apparatus that have been obtained are an Albrecht auxanometer and klinostat, a Leitz microspectroscope, an Engelmann microspectral objective, and a Bausch and Lomb horizontal microscope. For the general morphological laboratories a series of one hundred of Kny's *Wandtafeln* has been obtained, and the laboratories have

been equipped with a new supply of Leitz microscopes. A new Zimmermann-Minot microtome has been provided for the graduate room.

An attempt has been made to exhibit a series of illustrative forms, ranging from the slime moulds to the composites, in the special cases provided for the purpose. The object of this series, when ultimately completed, will be to exhibit in lineal order all the groups of plants, low and high, with typical representatives. The lower and simpler microscopic forms are to be illustrated by enlarged drawings and diagrams. The present illustrations will ultimately be replaced by a more complete series, which, for the most part, will be preserved in fluid and exhibited in flat glass jars. The cases underneath the serial illustrations will be reserved for bulky specimens of interest, and particularly for exhibiting the various economic products of the orders whose types appear immediately above.

Professor Underwood, Dr. C. C. Curtis, and Mr. Lloyd were in attendance at the winter meeting of the Association of Naturalists at Ithaca. Professor Underwood read a paper on the teaching of botany in the secondary schools before the New York State Science Teachers' Association. Dr. Curtis lectured before the students of Union College on the significance of morphological characters, and also before the biological section of Syracuse University.

Mr. Marshall A. Howe has published recently a paper on the North American species of *Porella*, and an elaborate discussion of the Anthocerotaceæ of North America, the latter illustrated with six plates. Dr. Small has been reviewing the genus *Eriogonum* and has published twenty-two new species in the January number of the *Bulletin of the Torrey Botanical Club*, together with a new genus in the same family, *Acanthoscyphus*.

The School of Pure Science has sustained a sad loss in the untimely death of Joseph G. C. Cottier, Fellow in Mechanics. Mr. Cottier died at Paris, France, August 17, 1897, at the early age of twenty-three years.

Mr. Cottier was a graduate student in Columbia during the academic years 1895-7. The exceptionally rapid progress he made justified the expectation that he would soon become an original investigator of the first order in the domains of mathematical physics. It seems proper, therefore, that a brief sketch of his career should be recorded here.

Joseph Germain Charles Cottier was born in Jersey City, N. J., May 29, 1874. He was graduated from Stevens Institute of Technology, with the degree of mechanical engineer in 1894. During the following year he was employed in engineering work, partly by the East River Gas Company of New York and partly by the Blake Pump Company. Although successful in this work, it proved of little interest to him, and he resolved to turn his attention to studies which would lead him to an academic career. Accordingly he applied for and was awarded a scholarship in Columbia University, and he entered the School of Pure Science in the autumn of 1895. He chose mechanics as his major subject and mathematics and education as minors. At the end of the academic year 1895-6 he was appointed fellow in mechanics and received the degree of A.M. Continuing his studies with marked proficiency, he was reappointed Fellow in Mechanics at the close of the year 1896-7, and he expected to complete the work required for the doctorate degree during the present academic year. He had made a special study of the science of hydromechanics. He had read and mastered nearly all of the extensive and profoundly difficult literature of this science, which has occupied the attention of the most eminent mechanicians during the past two centuries. He had already begun to produce original work in this field; and on departing in July last for Europe he left for publication papers on the equations of hydrodynamics in a form suitable for application to problems connected with the movements of the earth's atmosphere, and on the expression of the general equations of hydrodynamics in terms of curvilinear coördinates. The first of these papers has been published in vol. xxv of the *Monthly Weather Review* of the United States Weather Bureau, and the second will be published in the *Mathematical Review*.

Personally Mr. Cottier was an exceedingly unassuming man, and modest almost to shyness with respect to his own attainments. Because of these characteristics, and by reason of incessant occupation with his studies, few of his associates, and few even of his instructors, came to know him intimately. The few to whom he became well known, however, held him in highest esteem, as well for his singularly gentle and courteous manliness as for the penetrating clearness and strength of his intellectual capacity.

It is fitting in this connection to state that Mr. Cottier's parents have given his collection of treatises and papers on the mathematico-physical sciences to the library of the Department of

Mechanics. They have thus founded a permanent memorial of their son's devotion to science, and have at the same time shown his and their appreciation of the fellowship honors which Columbia had twice bestowed upon him.

R. S. W.

Professor Rees has recently lectured before the astronomical section of the Brooklyn Institute on variation of latitude; before the Emma Willard Association on the use of photography in astronomy; before the Y. M. C. A. branch in the Bowery on the wonderful revelations of photographic astronomy; and before the Educational Alliance on Copernicus and Galileo. He has been appointed by President McKinley "one of the Commissioners to examine and test the fineness and weight of the coins reserved by the several mints of the United States during the calendar year 1897." The Commission met at the Philadelphia Mint on February 9.

Miss Catherine W. Bruce, of New York city, has made, through Professor Rees, a generous gift to the observatory for carrying on its work.

BARNARD COLLEGE

The recommendations made in the report of the Columbia Conference on Uniform Entrance Requirements affect the preparation of girls as well as of boys, since they have been adopted by Columbia and Cornell. To follow up the advantage thus gained, the Dean of Barnard College, at the suggestion of the League of Parents and Teachers, invited the prominent colleges for women in New England, New York, and Pennsylvania, to confer on the question of adopting these recommendations. On Saturday, January 22, the conference met at Barnard College, the delegates being President Taylor, of Vassar, Professor Jordan, of Smith, President Irvine, of Wellesley, Dean Irwin, of Radcliffe, Professor Smith, of Mt. Holyoke, and Dean Snow, of the Women's College of Brown University.

The question before the conference was the purely administrative one of the possibility and desirability of uniformity, no attempt being made to discuss the Columbia reports on their merits. As the upshot of the discussion, it was resolved that each delegate refer to his faculty the following resolution, and that any action taken in regard to it be reported to the President of the League of Parents and Teachers: "Resolved that the Conference of Colleges

called by Barnard College at the suggestion of the League of Parents and Teachers, consisting of representatives of Barnard College, of Brown University, and of Mt. Holyoke, Radcliffe, Smith, Vassar, and Wellesley Colleges, agrees that a student fully prepared according to the recommendation of these reports, with the addition of due preparation in English according to the standard generally accepted, in science, and where necessary in further work in history and in mathematics, is fitted to enter the Freshman class of any of the colleges represented." Until action is taken by the faculties concerned, this resolution remains a mere expression of opinion, as the conference had no power to adopt it. It was, however, endorsed by each delegate individually, and, if found to be borne out by the facts, it will offer a practical remedy for the conditions which are demoralizing the work of the schools, and consequently reacting on the colleges.

TEACHERS COLLEGE

Teachers College, by its incorporation in the University, has entered upon a new era. Sympathy, proximity, and, from an educational point of view, necessity, have brought about this alliance with Columbia University, by which the College has become one of the schools of the University, on the same basis as the Schools of Law and Medicine, with the important difference that the Teachers College retains its corporate existence, with a separate Board of Trustees and financial independence.

Since the terms of the incorporation were agreed upon, the College has been under the direct administration of President Low; and a number of the University professors occupy seats in the College Faculty—namely, Professors Butler, Hutton, and Cattell. The Dean of Teachers College, Dr. James E. Russell, and one of his colleagues in the College Faculty—in the first instance, Professor Franklin T. Baker, of the chair of English language and literature—represent Teachers College in the University Council. Having thus become an important part of a still more important whole, the future of the College as a school for the training of teachers is assured. The connection with the University helps it to draw men of the highest ability to its faculty and to raise its standards of scholarship. It is hoped that under the new arrangement, the study of teaching may be put upon the same scientific plane, as regards both theory and practice, as the other professions.

Among the earliest results of the incorporation are several new

appointments to the Faculty of Teachers College. Frank M. McMurry, Ph.D., Dean of the School of Pedagogy, University of Buffalo, has accepted the professorship of the theory and practice of teaching, and will enter upon his duties at the opening of the next academic year. Professor McMurry was a student at the University of Michigan in 1880-82, was engaged in public school work in Illinois until 1886; and then spent three years in Germany as a student in the Universities of Halle and Jena, taking his doctor's degree at the latter University in 1889. Upon his return to America he was called to Chicago to take the principalship of one of the grammar schools in that city, and from there he was called to the chair of pedagogics at the State Normal School of Normal, Ill. In 1893, after another period of study abroad, at the universities of Geneva and Paris, he was called to the chair of pedagogy at the University of Illinois, and from there to Buffalo to assume charge of the educational department of that University. He is the author of several monographs on education, especially on the Herbartian theory of education. His *Method of the Recitation* is an authoritative work that has become a text-book in many colleges, and has been pronounced epoch-making by the *Educational Review*. The resignation of Professor McMurry from the University of Buffalo means the practical absorption of the Buffalo School of Pedagogy into the Teachers College of Columbia University. The study of education and the professional training of the teacher, so it is announced, will be abandoned at Buffalo at the end of the present year, special measures having been taken to enable the students of Professor McMurry to continue their work under him at Columbia University.

The announcement of this accession to the Faculty of Teachers College was followed closely by that of the appointment of William Baird Elkin, Ph.D., a lecturer on philosophy at Cornell University, to a lectureship in the theory and practice of teaching. Dr. Elkin was graduated from Manitoba University in 1889, and went from there to Cornell to serve as a fellow in philosophy under President Schurman, where he remained three years as candidate for the degree of doctor of philosophy. He was then called to Indiana University to fill temporarily the chair of philosophy, and later to Colgate University. He left Colgate to pursue his studies abroad at the universities of Berlin and Jena, where he studied education under Professors Paulsen, Rein, and others, and familiarized himself with the workings of European schools. The results

of his studies have appeared from time to time in the *Philosophical Review* and other journals.

The latest appointment to be announced is that of Professor Charles R. Richards, hitherto the head of the Manual Training Department of Pratt Institute in Brooklyn to a corresponding place in the Teachers College faculty. In a sense this appointment of Professor Richards may be called a return to his former associates, for at one time he was connected with the Industrial Education Association which was the direct predecessor of the present Teachers College. Mr. Richards was graduated from the Massachusetts Institution of Technology in 1885; and was immediately made the Assistant Superintendent of the Whittier Machine Company with whom he remained until 1887, when he was called to the Association above mentioned. In 1888, when the Pratt Institute was founded, he was the first to be summoned by Mr. Pratt to design, equip and direct the extensive shops of Pratt Institute, in Brooklyn, for wood-turning, foundry and forge work as well as to direct the installation of the steam power and electric lighting plants. In this capacity he has acted as Director of the Mechanic Arts Department of that institution throughout its first decade. Professor Richards is the author of several treatises and monographs on the Methods and Theory of Manual Training, and is the President of the American Manual Training Association.

The following readjustment of the courses at Teachers College has been undertaken since its incorporation in the University and since the participation of the University's officers at its faculty meetings. Four-year courses leading to appropriate diplomas or to the baccalaureate degree, have been established in the departments of secondary, elementary, and kindergarten teaching. Two-year courses are to be given in the respective departments of art, domestic art, domestic science, and manual training. Graduate courses are offered leading either to the University degrees of M.A. and Ph.D., or to an appropriate professional diploma.

The latest available statistics concerning Teachers College show that the total enrollment at that institution is 968 students. Of these 395 attend the school of observation and practice, 292 the extension classes, and 281 the College proper, with 140 coming from the other departments of the University and from Barnard College.

ALUMNI NOTES

The third annual meeting of the Alumni Association of Columbia University in Colorado was held at the University Club, Denver,

on February 5. The association has fifty-four members—graduates, in great part, of the faculties of Applied Science, Law, and Medicine. In his notification to members of the date and place of meeting the secretary took occasion to say that “Columbia is steadily enlarging her sphere of usefulness and forging ahead into the first rank. Her new buildings are imposing and commodious; her corps of teachers has been strengthened; her class rooms and laboratories are better equipped; and in each departments he is more than ever prepared successfully to compete with our best institutions. Never have we had so great reason to take pride in our *alma mater*.”

The Columbia University Alumni Association in Montana celebrated its first year of existence by a dinner, at Helena, Montana, on January 15. There was a good attendance of members of the association, and several other colleges were represented. Congratulatory telegrams were received from President Low and from the University Alumni Council. Mr. Wilbur E. Saunders, the secretary of the association, acted as toastmaster.

The annual report of the standing committee of the Alumni Association of the College presents an interesting picture of the College and its surroundings upon the removal to Forty-Ninth Street in 1857. The writer of the report, who was a member of the class of '63, evidently gives his personal recollections, among which the most striking is an incident of the war, which he describes as follows:—

“One of the most interesting events was the reception given April 24, 1861, to Major Anderson, on his return from the surrender of Fort Sumter. The students were assembled on the Campus, wearing their gowns, decorated with red, white, and blue ribbons. President King, with the faculty and trustees, received him. After prayer by the Rev. Cornelius R. Duffie, chaplain, the American flag was raised by Major Anderson, while the Star Spangled Banner was sung by all present. Hon. Hamilton Fish, president of the board of trustees, made an address. In it he said: ‘The earnestness and enthusiasm of this occasion show us that Columbia College is true to her teachings. The traditions and the history of the past are those of patriotism and love of country. The voice of wisdom and of patriotism came from Columbia College, and did much to arouse the public sentiment of the city, then loyal to the crown.’ ”

The Association appears to be in good financial condition, having a balance of \$434.53. During the year a new edition of the *Alumni Directory* has been published; but the chairman comments upon the fact, which this list discloses, that a large number of graduates

have not joined the Association. In fact, the published statistics show that the membership has fallen off considerably during the last three years. In view of the great advances which the College has made during this period, and the increased pride which every graduate of Columbia must feel in his *alma mater* in her new environment, the very contrary should be true; and there can be no doubt that, if the Association would institute an active canvass and would hold more frequent social meetings, the conditions would be materially improved. It appears from the report that, in addition to the alumni associations in this city, which are represented in the Alumni University Council, there are also associations in Connecticut, Illinois, Washington, D. C., Colorado, and Montana.

UNDERGRADUATE NOTES

On January 7, sixty men presented themselves as candidates for the crews. Of these twenty are now in training for the University crew, the first crew with an average weight of 166 pounds. These men include three members and the three substitutes of last year's University crew, and seven of last year's Freshman eight. The Freshman squad has likewise been cut down to twenty. The average weight of their first crew is 158 pounds. The men are at present being coached by Mr. Webb, under the direction of Mr. Cowles, who will take charge of them when they go to Poughkeepsie. The executive body in rowing matters is now the Board of Governors of the newly organized Rowing Club. The Track Team has 171 candidates, most of them novices. There is, however, a strong nucleus of more experienced men, including seventeen who have won points in either the Intercollegiate or the Princeton-Columbia games. A track association has been formed on the same lines as the Rowing Club, and this association will direct the policy of the team. The Hockey Team, since January 1, has beaten the New York Athletic Club second team (five goals to four) the Naval Reserve (one to nothing), the New Jersey Athletic Club (four to one); and has lost close games to the second seven of the New York Hockey Club, the Montclair Athletic Club and the first team of the New York Athletic Club. The bicycle squad, now numbering about twenty men, and including all but one of the intercollegiate champions of last year, has begun gymnasium work. The profits of the Junior ball and the Sophomore play amounted to \$650 each. These sums will make a welcome addition to the athletic funds of the University.

The *Columbia Spectator* has elected A. A. Fowler as its new editor-in-chief, W. M. L. Fiske, Jr., as managing editor, and W. H. Maxwell, Jr., as business manager, and the *Literary Monthly* has elected G. S. Hellman as editor-in-chief, and M. H. Caul as managing editor. A Southern club has been organized in the University, and already contains over one hundred members. The Senior Class in the College has elected the following Class Day officers: Committee, Messrs. Burke, Iglehart, Symmes, Iselin, Watson, Westerfield, and Morris; Valedictorian, F. P. Keppel; Ivy Orator, R. B. Pomeroy; Historian, J. F. B. Mitchell, Jr.; Prophet, Gerard Roberts; Poet, J. S. Schlusel; Presentation Orator, R. H. Stern. The Debating Union held, on January 15th, the first trials for candidates for the Chicago-Columbia debate. Of the twenty-six speakers, ten were retained. These ten competed in a second debate on January 25th, and were sifted to six—Messrs. Wheaton and Proskauer of last year's team, and Messrs. Ernst, Walbridge, Ehrhorn, and Cushing. From these men will be chosen the three men to debate against Chicago on March 25.

The removal of the University to Morningside has given a sharp stimulus to athletics. This is shown by the fact that there are now in training for the various teams almost twice the usual number of students, and also by the very widespread interest taken in the recent appointment by the University Council of a Committee on Athletics. The almost unanimous approval by the undergraduates of one of the avowed purposes of this committee—to restrict those representing the University to such men as are up to a fixed standard in scholarship—indicates that the present athletic movement is a thoroughly healthy one. It is unfortunate that all the other enterprises are not equally well supported. For instance, although happily Columbia has at present a few first-class men to represent her in the coming debate against Chicago, all the interest in debating is confined to some forty men. In literary work, affairs are in a better state, but still the number of men who write at all for the college papers is comparatively small. It is to be hoped that the new environment will eventually affect these undergraduate interests as it has already affected athletics.

F. P. KEPPEL, '98

SUMMARIES OF UNIVERSITY LEGISLATION

UNIVERSITY COUNCIL. SPECIAL MEETING

The University Council met in special session on December 2, 1897, to take suitable action in reference to the death of Professor Henry Drisler. The following minute and resolutions, prepared by the professors of Greek and Latin, were adopted :

The University Council, having learned with profound sorrow of the decease of Henry Drisler, LL.D., Emeritus Professor of the Greek Language and Literature in Columbia University, and for four years a member of this body, directs the following minute to be entered upon its records :

The death of Henry Drisler has taken away one whose life was uninterruptedly connected with the welfare of Columbia College for a longer period than that of any other man within the memory of this generation. In 1860, when the present Chairman of the Trustees of Columbia College, the senior of that body, was chosen a trustee, Dr. Drisler had already held a professorship in the College for more than fifteen years ; and it was in the same year that the present senior professor of the University was graduated from the College. From the time when his name was first entered in the matriculation book, it has not ceased to be borne upon the list of active members of the College for a period of more than sixty-two years. Entering in 1835, he was graduated in 1839. Thereafter he taught in the Columbia Grammar School, at that time under the control of the College ; in 1842, he received the degree of master of arts ; in 1843, he was appointed Tutor of the Greek and Latin Languages, under Professor Charles Anthon ; and two years later was promoted to the adjunct professorship. In 1857, the Department of Greek and Latin Languages was divided, Dr. Anthon becoming Jay Professor of Greek, while Dr. Drisler was made Professor of the Latin Language and Literature. This position he held for ten years, at the end of which time, on the death of Professor Anthon, he became Jay Professor of the Greek Language and Literature. He filled this chair until 1894, though his duties as Acting President in 1878, and again in 1888, 1889, and 1890, naturally interrupted his class-room work. His election to the Deanship of Columbia College in 1890 made it necessary for him to relinquish the active management of the Department of Greek. On the completion of his fiftieth year as Professor at Columbia College, in June, 1894, he retired from active service in this institution. But his interest in it was maintained to the very last ; even within the past few months he made it large and very valuable gifts of books from his own extensive classical library, and but a few days before his death he expressed the intention of paying a visit to the University in its new home, wishing particularly to observe the increased facilities for work in the Departments of Greek

and Latin—a plan which, unfortunately, was not destined to be carried out.

He had begun his work in the first home of the College, where he carried it on without interruption for seventeen years; he continued it during almost the entire period of the occupation of the buildings at Madison Avenue and 49th Street; and he has seen the work of education resumed after the removal to the present site of the University on Morningside Heights.

Professor Drisler was one of the first of those American scholars who turned to Germany rather than to England for the higher philological training, and he exhibited in his own work and his own teaching that scrupulous regard for accuracy and scientific precision that are so characteristic of German scholarship. By precept and example he impressed these qualities upon the minds of his own students; and such of them as afterwards went forth to labor in the field of classical teaching carried his spirit with them, and thus caused his influence to be so widely felt as to make it an important element in the evolution of scientific philological research in the American universities. But it was not merely through his teaching that Professor Drisler's personality so strongly affected those who came within his influence. His high character, his benignity and kindness, and a certain serenity of manner and of thought, impressed themselves most forcibly upon all who knew him, and especially upon those who had the privilege of his instruction. It is, indeed, the very highest tribute to say of him that among the many hundreds of those who received some portion of their training under him, there exists one universal sentiment—a feeling of admiration for the scholar, of gratitude for the teacher, and of affection for the friend.

It is, therefore, unanimously

Resolved, That the Council, in recording its sense of grief at the loss of this distinguished scholar, desires to express to the members of his family its profoundest sympathy with them on the occasion of the death of one whose labors were in their results not transient and ephemeral, but whose name is inseparably linked with the history of the University, as the record of his life-work must remain an enduring part of the annals of American classical scholarship.

Resolved, That the Secretary of the Council be requested to forward to Professor Drisler's family a copy of this minute and of these resolutions.

THE TRUSTEES. JANUARY MEETING

Mr. W. C. Schermerhorn was reelected Chairman, and Mr. Pine, Clerk, of the Trustees for the ensuing year. The following named gentlemen were elected to serve on Committees: Mr. Bronson, on Finance and on Buildings and Grounds; Rev. Dr. Vincent, on Honors; Rev. Dr. Coe and Mr. Cutting, on Education; and Mr. F. A. Schermerhorn, on the Library.

The Rev. Dr. Henry Van Dyke was invited to preach the baccalaureate sermon at the next Commencement; and Messrs. Charles F. McKim, Edwin H. Blashfield, and Daniel C. French were invited to act as an advisory committee on works of art tendered as gifts to the University.

A vote of thanks was tendered to Miss Catharine W. Bruce for a gift to the Observatory of \$1,600, to be used in the employment of computers; also to the Jones & Lamson Machine Company for a gift to the Laboratory of the Department of Mechanical Engineering of a flat turret lathe with outfit; also to the Otis Elevator Company for a gift of an experimental elevator installed by them in the Engineering Building; and also to the Babcock & Wilcox Company for their gift of two wrought steel water tube boilers added to the equipment of the power house.

The Committee on Buildings and Grounds were authorized to arrange for an exhibit at the Omaha Exposition.

The Committee on Education reported that, under the authority conferred upon them by the Trustees, they had adopted a resolution conferring the title of Emeritus Professor of Medical Jurisprudence upon Professor Ordronaux in recognition of his long and honorable service in the Law School.

The following appointments were confirmed under the Faculty of Applied Science: Marston Taylor Rogers, A.B., as instructor in organic chemistry; Charles A. Harper, as assistant in organic chemistry (both from October 15, 1897); and George Müller, Ph.B., as assistant in assaying, in place of Mr. Holden, resigned, from and after October 1, 1897.

The President and the Treasurer presented their annual report of the number of students enjoying free and reduced tuition, of which the following is a summary:

SUMMARY OF REPORT ON STUDENTS ENJOYING FREE AND REDUCED TUITION

	FREE	FELLOW-SHIPS	SCHOLAR-SHIPS	REDUCED	TOTAL
College.	20	..	30	2	52
Law.	18	..	3	..	21
Applied Science.	29	2	5	..	36
Political Science.	25	9	7	..	40
Philosophy.	52	9	15	..	76
Pure Science.	4	6	8	1	19
	<u>147</u>	<u>26</u>	<u>68</u>	<u>3</u>	<u>244</u>

FROM THE SEMINARIES

General Theological Seminary.....	8	
Jewish " "	4	
Union " "	48	
	<hr/>	60 60

FELLOWSHIPS

Drisler	1	
University.....	25	
	<hr/>	26 26

SCHOLARSHIPS

Alumni Association.....	3	
Alumni Competitive	1	
Brooklyn	4	
Faculty	3	
Moffat	1	
President's University.....	3	
Pulitzer.	14	
Schermerhorn.....	5	
Society for Promoting Religion and Learning.....	5	
Stuart.....	2	
University.....	27	
	<hr/>	68 68
Total.....		154

THE TRUSTEES. FEBRUARY MEETING

The Finance Committee reported the election of Mr. Rives as Chairman and Mr. Cammann as Secretary.

The office of Director of the Gymnasium was established, and Watson L. Savage, M.D., was appointed as Director.

It was reported by the Committee on Education that they had approved a new form of contract with the Teachers College. (See page 150.)

A vote of thanks was tendered to the New Jersey Zinc Company and to Professor Frederick R. Hutton for gifts to the University.

The position of instructor in physiological chemistry in the College of Physicians and Surgeons was created, and the appointment of William J. Gies, M.D., to the same was confirmed. The appointments were confirmed of David Joy Greene, C.E., M.E., as assistant in mechanical engineering, and William Gregory Hudson, M.E., as assistant in mechanical engineering.

The following professors were reappointed, in consequence of a letter received from Hon. Abram S. Hewitt, Chairman of the Board

of Trustees of Barnard College: John B. Clark, LL.D., as professor of political economy; Frank N. Cole, Ph.D., as professor of mathematics; and James Harvey Robinson, Ph.D., as professor of history.

The President reported that Rev. Dr. Van Dyke had accepted the invitation to preach the baccalaureate sermon; and that Messrs. McKim, Blashfield, and French had accepted the invitation of the Trustees to act as an advisory Committee on Art.

The President announced that Mr. William C. Illig, of the class of '82, School of Mines, had left a legacy of \$2,000 for the establishment of a prize for an essay.

Appended is the agreement, referred to above, dated January, 1888, between the Trustees of Columbia University and the Trustees of Teachers College:

For the purpose of securing to the students of the above named University and College reciprocal advantages and opportunities, and especially for the purpose of including Teachers College as a professional school for teachers in the educational system of the University, it is mutually covenanted and agreed:

First. That the President of the University shall be, *ex-officio*, President of Teachers College. He shall preside at the meetings of the Faculty of Teachers College and shall have general supervision and direction of the educational administration of such College as in the other schools of the University.

Second. That the internal administration of Teachers College shall be conducted by a Dean who shall be appointed by the Trustees of Teachers College on the nomination of the President of the University.

Third. That Teachers College shall be represented in the University Council of Columbia University by its Dean and by one other member of the Faculty, who shall be elected by such Faculty from among the professors giving instruction in courses leading to a degree for a term of three years, or, in case of a vacancy, for the unexpired portion of such term, except that in the first instance such representative shall be appointed by the Trustees of Teachers College, upon the nomination of the President, for a term to expire June 30, 1899. Such representatives shall have no vote in the University Council except upon questions affecting Teachers College.

Fourth. That the University Professors of Philosophy and Education and of Psychology, and their successors, by whatever title they may be designated, shall be members, *ex-officio*, of the Faculty of Teachers College, and the Professor of Mechanical Engineering shall also be a member, *ex-officio*, of such Faculty, so long as the workshops of Teachers College

are used by students of his department. Such professors shall have no vote in such Faculty except upon questions affecting the University or their respective departments, and shall have no right to vote for the representative of such Faculty in the University Council.

Fifth. That, so long as this agreement is in force, Teachers College shall grant no degrees.

Sixth. That the degrees of Bachelor of Arts, Master of Arts and Doctor of Philosophy shall be conferred by the University upon students of Teachers College, who shall have satisfactorily fulfilled the requirements of the University Statutes for the conferring of such degrees. The courses leading to the degree of A.B. shall be subject to the approval of the faculty of Columbia College, and the courses leading to the degree of A.M. and Ph.D. shall be subject to the approval of the University Council.

Seventh. That Teachers College shall continue to exercise the direction and control of all instruction given therein not leading to a degree, and the right to grant certificates therefor to students not candidates for a degree ; and also, with the approval of the University Council, to students who are candidates for a degree ; and shall exercise all other corporate rights and powers which are not delegated to the University by this agreement ; but this agreement shall not be deemed a surrender by Teachers College of any powers conferred upon it by charter.

Eighth. That Teachers College shall retain its separate corporate organization, and that the Trustees of Teachers College shall continue to provide for the financial support thereof, it being distinctly understood and agreed that the University is and shall be under no implied obligation, responsibility or liability of any kind whatsoever for the maintenance, support, direction or management of Teachers College, or for the disbursement of the income thereof ; but that all and every such obligation or liability shall be strictly limited to the duties and obligations hereinbefore expressly and in terms assumed and agreed to by the University.

Ninth. That the courses of instruction given in either the University or Teachers College shall be open, subject to the general regulations of each institution, to every male student who has duly matriculated in either the University or Teachers College.

Tenth. [This section, relating to fees, has not yet been fully determined upon.]

Eleventh. It is hereby further agreed that Barnard College may and shall become a party to this agreement whenever, during the continuance thereof, it shall ratify and adopt the same. Upon such ratification and adoption, every female student duly matriculated in Teachers College, who is eligible for admission to Barnard College, may, by registering as a student of Barnard College, become entitled to all the privileges enjoyed by the students of Barnard College in the University, and may become a candidate for university degrees. All female students so qualifying themselves to become candidates for university degrees shall be subject to the

provisions contained in this agreement as to fees and the conditions of granting degrees.

Twelfth. That the Libraries of the University and of the colleges which now are or may hereafter become parties to this agreement shall be open, upon equal terms, to all students of the University and of such Colleges.

Thirteenth. This agreement shall take effect immediately, and shall supersede the agreement between Columbia College, Teachers College and Barnard College, dated February 1, 1893.

Fourteenth. This agreement may be modified at any time by mutual consent expressed in writing, and may be terminated at the end of an academic year, and after one year's notice in writing, from any party to the others.

THE DRISLER MEMORIAL SERVICE

A service in memory of Dr. Drisler was held in the University chapel on the afternoon of Sunday, December 12, 1897, and was attended by a large number of the officers of the University. Addresses were made by President Low, Dr. Marvin R. Vincent, and Professors Van Amringe, Rood, Perry, and Butler. Dr. Drisler was so closely identified with the history of the University that the words of honor, respect, and affection spoken then are given below.

PRESIDENT LOW'S ADDRESS

Colleagues and Friends of Dr. Drisler :

The life we are met here to commemorate this afternoon has intertwined itself so closely with the life of this University for sixty years as to have become in a very real sense a part of the University's life. No one of us here—no one who knew Dr. Drisler well—can think of him without thinking of Columbia College. No one can think of Columbia College as any of this generation have known it, or of the generation that preceded it, without thinking of Dr. Drisler. Doubtless, part of this effect is due to the long space of time during which he has been connected with Columbia College and Columbia University. But that is not the whole of it. The Japanese ivy grows quickly over a building and beautifies it; but it does not grow thick and strong, and seem to take it into its possession, as the English ivy does. But the English ivy requires many years for such a result. In other words, you must have not only the lapse of time, but you must have the qualities that lead to this perfect identification. Those qualities I seem to find in Dr. Drisler to have dwelt partly in force of character and partly in the quality of his service.

There are two episodes in his career—one connected with the College, and the other not—that seem to me to make clear, even to those who knew the Doctor only in his old age, that he had great force of character. It is not, perhaps, especially notable that he should have been selected to be Acting President when Dr. Barnard retired in 1888, because then he was so much the oldest member of the Faculty that such a choice on the part of the Trustees might have been considered a primacy yielded out of respect to his years; but that was the second time that Dr. Drisler was chosen to be Acting President. In the prime of his life, also, when he was an associate of other men, his seniors in years, he was chosen to be Acting President. This was in 1867, when President Barnard was absent upon leave, representing this country as a Commissioner to the Paris Exposition of that year. So that it is clear that Dr. Drisler—not because of his age at that time, but because of what he was—was selected by the trustees then for the same primacy that they gladly gave to him a second time in 1888.

But another thing, I think, outside of the college, shows the power of his personality. Forty years ago he gathered a few men around him, who, like himself, were fond of Greek, and founded the Greek Club. For forty years without intermission that club has held its sessions winter after winter, at least as often as once a fortnight. Now, men are in the habit of saying of New York that it is a great commercial city, a great manufacturing city, or a great financial city. It is only of late years that we begin to hear it said that it is also the intellectual centre of the country. No one would have thought of saying such a thing forty years ago. Yet forty years ago Dr. Drisler gathered a group of men about him for the pleasure of studying Greek, and held them about him for forty years by the force of his personality. It reminds me, in a way, of Laplace working out his theory of Celestial Mechanics in Paris during the French Revolution. It is the doing of something under unfriendly conditions, one might say, so striking that it is eloquent as to the force of the personality that accomplishes it.

Then Dr. Drisler's quality of service, also, was such as to account, in part, for this identification of himself with the college of which I have spoken. First of all, it was marked by an absolute faithfulness. Nothing came between him and his obligations to Columbia. When in business life, I used to think that the punctuality of successful and active business men might stand as a model for all people. Since I have been in college circles I have come to realize that a college professor, by reason of his habit of meeting his classes punctually on the moment, day after day, acquires a habit of punctuality that is certainly worthy to stand beside the other. Dr. Drisler's service to Columbia was a loving service. Even after his retirement, year after year, he was enriching our university library with selected volumes from his own, until the number of books that he has given to us during the last few years must be numbered by several thousand. And then, of course, his scholarship, his broad and deep scholarship, was always at the service of the students of Columbia and of the institution.

Not only was it at their service, but it was also adding dignity and giving reputation to the whole body of Columbia men, whether connected with the college or not.

And that leads me to say a word about what I think was rare and characteristic in the nature of this scholar, the way in which he held his scholarship. I remember something that was said by Professor Torrey, the botanist, when I was a student here myself. I often have recalled the utterance. "Chemistry," said Dr. Torrey, "is my bread and butter; but botany is my love." Dr. Torrey, the chemist, is already forgotten; but Torrey, the botanist, has a world-wide and enduring fame. In other words, men make their mark where their heart is. Dr. Drisler's heart was in the classics, and he made his mark there as a scholar; but, although the classics were his bread and butter, to use Dr. Torrey's words, as well as the channel of his fame, he never ceased to use them for refreshment and for pleasure. What I have said in regard to the Greek Club shows how, during all these years, he kept his interest in the classics fresh by his use of them for enjoyment. He would not permit them to become simply his bread and butter. Neither would he permit them to become merely the rounds of the ladder by which he climbed to a scholar's reputation. Whenever he was weary he turned to them for refreshment, and they supplied the new courage and the new strength with which he resumed his work.

All of us who have known Dr. Drisler know the charm of his personality. When I first entered college as a student he was professor of Latin. The following year, through the death of Dr. Anthon, he became the professor of Greek; and, in 1867, by reason of the absence of President Barnard, the Acting President. I met him afterwards for a year or two at the Greek Club, and then for many years I saw little of him until I returned to Columbia as the President-elect. I wish I could give you some idea of the fatherly kindness with which he welcomed me. I think I could not have been greeted more tenderly or sustained more fondly in every effort to serve Columbia had I been his son. It was something more, I used to think—and now I am sure of it—than the loyalty of the man to his *alma mater*. It was the fondness of the old teacher for his pupil; and I believe he was happy in the honor that came to his pupil—even more, perhaps, than if it had come to himself.

And now his fame has become ours permanently. His whole career illustrates, I think, the happiest side of the teacher's life. I fancy no student ever came to Columbia whose respect Dr. Drisler did not command; and as he grew old I am sure that he must have had numberless evidences of the affection with which he was remembered by all who had been associated with him and by all of the students who had come to know him well. It is by such work and by such lives that the permanent power of a university is made. We sometimes hear it said, and said truly, that a university is made great by its men; but, my colleagues, let us never forget that it is not made great only by its living men. It is not made great simply

by the living, but it is made great by the accumulated achievements of those who have passed before, as it will be by those who shall follow us. We are most true to the strong men with whom we have been associated and who have been called away, when we find in the thought of them and in the power of their life an inspiration to do better service ourselves in the days that remain to us.

DR. VINCENT'S ADDRESS

I count it a privilege that I may speak my word to-day concerning my dear old instructor and friend, Professor Drisler.

It is fifty years since I first made his acquaintance. I entered then, as a boy, the old Grammar School of Columbia College, which was situated in Murray Street, between Church Street and College Place, where Professor Drisler was in charge of the first classical form. I came under his tuition during the last year of my stay in the Grammar School, and in 1850 entered the Freshman class of Columbia, in the building on the green between Church Street and College Place. Professor Drisler was then Adjunct Professor of Greek and Latin, and the greater part of the instruction of the Freshman year was conducted by him. I can see now, as plainly as if it were yesterday, the classroom in the third story, to which we mounted by the broad staircase—the classroom with the green desks, where we read Cicero and Horace, Homer and Xenophon, and studied Greek and Roman antiquities, and ancient geography.

According to my recollection of Professor Drisler in those days, I should not call him a magnetic teacher. He had not the brilliancy of Anthon, though, in my judgment, he was a sounder and better built-up scholar, in the long result, than Anthon. But as Dr. Low has just said, there was no student whose respect he did not command by the solidity and accuracy of his learning, by his uniform kindness, and by the conscientious strictness with which he held us to our duties. We soon discovered that, under the apparent severity which attached to the work of the lecture-room, there beat a warm and gentle heart. He showed the strongest desire, and the most ready willingness, to forward the efforts of every conscientious student upon the line of his own favorite pursuit.

I shall not attempt to speak of Dr. Drisler's contributions to classical learning. That will be done by those who are more competent to do so than I am. But, after all, the impression of Dr. Drisler which remains with me is not so much the impression of the scholar and teacher, as of the man. From the time of my first acquaintance with him in the Grammar School to the time of his departure from us, I maintained my intercourse with him, personally and by correspondence. I can most heartily indorse what has been already said concerning his geniality, his heartiness, and especially his quick sympathy, and his readiness to impart of the rich treasures of his learning to promote the literary work of others. I repeat that it is Dr. Drisler as the man, that rises before my thought. I have

somewhere a letter from him in which is a passage which has always remained in my memory, because it seems to me to strike the keynote of his labor, and to afford an insight into the profound conscientiousness which marked all his work and all his intercourse with society. He was speaking of his own literary labors, and about what he still desired and proposed to do, and he said: "I wish to do this and that and the other thing (naming them), and then I shall have paid the debt of early culture, and shall feel that I am permitted to lay my work aside." Those words exhibited the impulse which was behind his efforts for the promotion of classical learning. He accepted his early culture as imposing a debt. Like the Apostle Paul, he would have said, "I am debtor." "I have received, and I must give." How generously and how nobly he paid his debt, is known to every one here.

Every one who knew Dr. Drisler knows that he was a profoundly religious man. I do not at all mean in the conventional sense. It is true that he was a devoted member of the Episcopal communion, and an officer in the Episcopal church for many years, and that he honored his official position, as he did every other position that he held; but, more than this, his religion entered as fibre into his being, and pervaded all his activities, and moulded and guided all his relations with his colleagues, his students, and his fellow-men at large. There was in him, moreover, a deep tenderness which showed itself in very quiet and unobtrusive ways in his religious life. He was a diligent student of the New Testament, and the desire grew upon him with his years to visit the scenes of the ministry of Saint Paul, and to walk in the footsteps of

" * * * * those blessed feet

Which, nineteen hundred years ago, were nailed,
For our advantage, on the bitter cross."

It was one of the disappointments of his life that his health would not suffer him to carry out this wish; and as he stood, in company with his daughter, gazing upon the Areopagus, he remarked, "I shall never see the earthly Jerusalem, but there remaineth a heavenly."

My friends, I cannot feel to-day that this is an occasion of mourning. I know there is a sadness which inevitably accompanies the rending of the ties which bind us to each other here; and yet, I do not know what better we could ask for our best friend, for our most beloved kinsman, than that he should have been allowed to fill the full tale of human years; that he should have crowned those years with beneficent activities; that he should have faithfully served the church and society; that he should have promoted the interest and the progress of the department of learning which he loved; that he should have set his mark upon so many hundreds of youths, and stimulated them in the various paths of learning and culture; and that then, having finished his work, he should be peacefully gathered to his fathers, and enter into rest, "like as a shock of corn cometh in in his season."

In the course of a long ministerial experience I have witnessed many funeral occasions ; I have seen many a large assembly gathered to do honor to the departed good and great ; but I do not remember a demonstration which could compare with that which, in old Trinity, attended the burial of our friend. And it impressed me so strongly, not only because I felt that it was a deserved tribute to my departed friend and teacher, but also because it proved that, in this busy, pushing city, which is commonly thought to be occupied with trade and money-getting, there is something which recognized and honored the quiet work and worth of a quiet scholar, who did his work in the trenches and at the foundations, and not amid the joy and gratulation which wait on the bringing of the capstone to its place—a man who won his success by hard work, and who believed in no success that is not founded upon honest and thorough work.

Let us cherish his example in our hearts. Let us try to win our successes as he did his, and may we some day see his face again amid fairer and happier scenes.

PROFESSOR VAN AMRINGE'S ADDRESS

It was my good fortune to have the acquaintance and the friendship of Doctor Drisler for nearly forty years. I knew him as a student knows his professor, as an officer of this College thirty and more years ago knew his colleague ; I served with him on committees and boards unconnected with college affairs—I knew him, in fact, in nearly every way that one man can know another not of his own family.

As I reflect upon my long association with him, and the qualities that he manifested, I am, more and more, impressed with the many noble and attractive features of his character.

He had a self-sustaining, serene, and cheerful spirit. This made itself apparent in all ways and under all circumstances. In illness, or other trouble, he did not repine ; in disappointment he was not cast down, nor did he complain. In the family circle, in the society of friends, he was an animated and delightful companion. His mind was stored with an accurate, discriminating, and comprehensive knowledge of the monuments of ancient classical literature ; informed upon the historic movements of the world, in secular and in sacred things, in thought and its adequate and elegant expression ; and was imbued with a love of poetry. To this rich and varied intellectual endowment, he added simplicity of character, ease of conversation, a cultivated voice, a sincere desire to please ; and was the light and the charm of any company that was graced by his presence.

He had a positive genius for painstaking, exact, and prolonged labor. In the line of study and activity to which he was devoted, nothing was so small as to escape his attention, nothing so large as to daunt his endeavor. This capacity, minute observation, and courage, joined to fixedness of purpose and absolute intellectual honesty, gave him power. Through it, and notwithstanding the engrossing nature of his professional engagements, he became one of the foremost classicists of his time.

In his teaching he was formal and minute, intent rather upon the language of an author than upon the literature it embodied—upon words, their significance, derivation, and their relations in a sentence. However much opinions may differ as to the interest attaching to such a mode of treatment, there is no doubt that it was assiduously followed and followed with a purpose. No one can tell the influence upon individual students exerted by any system of instruction conscientiously and persistently practiced for a definite end. A few days ago an alumnus of this college distinguished for his business career, which has brought him substantial rewards and has not crushed out of him the love of letters, told me that he attributed a good share of such success as he had had to the careful and exact way in which Professor Drisler taught him, and trained him in verbal accuracy. The habit of mind that he thereby acquired, the attention to detail, had been of inestimable value to him in the conduct of his affairs. The professors who are at the head of the classical departments here have recently declared, that the scrupulous regard for accuracy and scientific precision that he exhibited in his own work and teaching have, through his pupils, caused his influence to be so widely felt as to make it an important element in the evolution of scientific philological research in the American universities. Surely, one who so strongly affected men in two spheres of life, so different as those referred to, discharged with success the highest functions of a teacher and a guide.

I shall not recount the familiar story of Professor Drisler's connection with Columbia and the multifarious services that he rendered. His manner of retirement and the attending circumstances were worthy of the faithful officer and his *alma mater*.

A supreme test of the quality of a man comes, I think, when he ceases to do that which has been the occupation of his life. He loses then the consciousness of every day importance, the accustomed contact with his fellow-men, the familiar incentive to daily labor. These are diminutions which advanced and advancing age inevitably brings with it—and thrice happy is he who has in reserve a store from which what is taken away in one regard he can supply in another. That was the rare fortune of our friend. When he closed his account with us in 1894, he did not become apathetic; he did not sit with folded hands and watch, as one apart, the flow of the stream of daily life. He remained in the current. He expressed, and I believe he felt, no regrets. He cast no long and lingering glance behind; he looked forward. He occupied himself with other matters that he had long had at heart, but the service of which, on his part, had been restrained by his devotion and loyalty to the College. He was a scholar and loved libraries. The evidences of his regard may be seen in our own library, in the Society Library, in the Astor Library, and in the great Public Library which is soon to be housed in a building worthy of it and of the community which it is to serve. At no time after reaching early manhood was there absent from him a longing to see provided for the public of New York the

enjoyment, or the opportunity for the enjoyment, that he himself had in a large, varied, and well chosen collection of books. He took, therefore, the most sincere and unaffected pleasure in serving as a trustee of the Astor Library; and when that library was merged in the larger scheme, he had the feeling of intense satisfaction that comes from the certain and near gratification of a long cherished desire.

He had, also, other, higher, and more secure protection against listless inactivity. He had a fervent and unwavering faith in the precepts and the promises of the Gospel. He felt the imperativeness of the injunctions laid upon him, and reverently obeyed them to the best of his ability. He was earnest in the service and support of the Church of his affection, diligent in his efforts to extend among his fellow men its benign influence.

And he had his reward—in a long life replete with usefulness, in an untroubled and honored old age, and in a death painless and so peaceful that it came like a benediction. I venture to say of him what Mr. Verplanck impressively said many years ago of Chief Justice Jay: "When the tidings of his death reached us they were received not with sorrow or mourning, but with solemn awe, like that with which we read the mysterious passage of ancient Scripture, 'And Enoch walked with God, and he was not, for God took him.'"

PROFESSOR ROOD'S ADDRESS (in part)

You have already listened to three very interesting and eloquent addresses; and, as you may imagine, it is not likely that I can have anything of importance to add to them. I will confine myself to one or two social trifles connected with the intercourse that I had with Dr. Drisler; they have some meaning for me, but as to whether they will have any meaning for you—that is another matter.

When I came here, rather more than thirty years ago, as a Professor of Physics, Columbia College was a somewhat intensely classical institution. The classics had been cultivated with great effect and great success, and the introduction of science was rather frowned upon by the Faculty. In point of fact, among themselves, in a half jocose way, they sometimes spoke of the advent of the scientific professors as "the irruption of the Barbarians." Of course, they did not mean quite that, but the scientists were not very popular. Well, on my arrival here, I was received by the Faculty politely, but with no cordiality. Now, there was one exception: it was not so in the case of Dr. Drisler. He immediately called upon me, invited me to dinner, offered to do anything for me that he could, and was just as pleasant and delightful as though I had not forgotten all my Latin and Greek. He knew that, for I told him so almost in my first interview; and afterwards, during my whole intercourse with him—my academic intercourse—I always found him sympathetic in the affairs of my own department. Whenever I wanted anything that was at all reasonable, he was always ready to help me if he could. Occasionally I perpetrated upon him some of the very few

Latin quotations that still clung to me, and he was delighted. He would take the ode up where I left it, and run it on a dozen lines or more. And he never corrected my quantity. I noticed that particularly, because he was sharp enough in the case of orators who addressed large assemblies and undertook to pose as classical scholars, and got their quantities all wrong, and even the words not quite right. There was an observation that he once made that I have thought over more than once. I had become a little interested, through our lamented friend, Professor Merriam, in Greek archæology, and I had not only innumerable conversations with Merriam about these matters, but also with Dr. Drisler. He was perfectly delighted, sympathetic as he could be; and he once made this remark: "When a young man has been grounded in the classics in his youth, although in after life he may seem to have forgotten all of his Latin and Greek, yet they are certain to crop out in some form. But if a man has never studied the classics, excavations on the sites of ancient Troy, Mycene, and Delphi, will have no more meaning for him than early Chinese history."

PROFESSOR PERRY'S ADDRESS (in part)

In looking at the life work of Professor Drisler—and I shall look at it rather from the point of view of the classical scholar than from that of one of his pupils—in looking at his work, I do not know whether I should most admire the extent and depth of his learning, or the extraordinary modesty which characterized him to the very last. It has been said by one or more who have preceded me to-day that his work was very largely lexicographical, and that is perhaps the side of his work that has made him best known to the classical scholars of the country at large. But when one has said that he was a great lexicographer, I do not think that it is made clear to the public at large what that really means. The lexicographer has a great deal more to do than merely to catalogue words. He would even then be accomplishing a task which might easily disconcert any but the profoundest investigator; but the lexicographer has a great deal more to do than that. He has to explain what he catalogues. He has to approach his task very largely from the historical point of view. He has to show the development of the meanings of the words which he catalogues. He has to show how those variations have grown up; and, in the case of Ancient Greek, he has to trace out the history of words through the literary life of a language which extends over not less than 1,500 years. A single sentence in the preface to one of his best known works seems to me to express very characteristically and beautifully his own attitude towards his work. He says, at the close of the preface to the American edition of Yonge's *English-Greek Dictionary*: "Much of the labor of dictionary makers is never seen. Those who have been engaged in similar work can estimate as to how much of any visible result is purely negative." If one thinks of the period of more than sixty years which Dr. Drisler devoted, without interruption and with unvarying conscientiousness, to that work, one can perhaps realize how

vast is the labor often required to produce one small positive result. For one such there are hundreds of negative results which the public never knows about. It is most striking, I think, that at the time of his first identification with classical research, he should have devoted himself to that line of work. It is often peculiarly thankless, not only because of the negative results of which I have just spoken, but also because the maker of the dictionary gets generally very small credit for the positive results which he sets before those who use his works. Now the maker of dictionaries not only has to catalogue and explain, but he has to read. He has to read practically everything—and by Professor Drisler it was practically done—that is accessible in the language of the dictionary which he is about to make; and that is a task which Professor Drisler set himself in the very first years of his life. The services which he rendered to his college and to the classical public in general were made possible by that thoroughness and devotedness of research.

I recall in that connection a remark which he made to me in the last year of his life. We had been talking about the possibility of continuing work under untoward and disadvantageous circumstances, and he said to me, "I find that in the last years of my life I have to spare myself. I can no longer work as I could. When I realized that I was an old man, I found that I could no longer sit up with my books as I used to do, until two o'clock in the morning. I found that I had to stop my work at one." The remark seems to me to throw a light upon that characteristic of undying devotion to his work, that there was nothing save absolute physical breaking down which could cause him to diminish it to any extent.

PROFESSOR BUTLER'S ADDRESS

The grateful pupil may not speak of his departed teacher in words of critical praise. Rather do the affections bring warmth and color to his judgments. And rightly so. The things in life that are best are the affections. The loves that a man leaves behind him are his worthiest monument. To be missed by the heart is more finely human than to be recalled coldly by the intelligence.

The strenuousness of Dr. Drisler's long intellectual life was deeply tinged with love. He loved, as companions, those giants of the race who gave its direction to our civilization. He loved, as highest realities, those early triumphs of art and of letters that have been the ideals of the ages. He loved, as the dearest friend of a scholar's leisure, the school-work of his life. He loved, as his children, the boys who grew to manhood under his eye, and who passed out into the world of affairs marked with his influence. He loved, as his very own, the college of his boyhood and youth, the university of his ripper years.

To him who gave so much, much in turn was given. The men of Greece and Rome gave him the foresight, the reflective habit, and the sense of harmony and proportion in things intellectual that were so characteristic.

The classic masterpieces of art and of letters gave him serenity of temper, breadth of vision, and a deep sympathy with Kalokagathia in all its forms of appearance. Teaching gave him the spirit of helpfulness and patient earnestness in seeking truth. His pupils gave him reverent affection that never faltered or failed. His college, bearing on its policy the impress of his personality, gave him every honor in its ample store. He received so much because he gave so much.

It may be said of the teacher, as Fichte has said of the man of letters, that he is a prophet. It falls to his lot to proclaim the eternal principles that underlie and determine events as they pass, to make known the substantial as revealed in the accidental. Dr. Drisler worthily wore his prophet's mantle. His teaching was always of the prophetic type. Whether he traced the course of human passion with *Æschylus*, or of human achievement with *Herodotus*, or of human reflection with *Plato*, it was the vital and essential elements of the process that he most loved to dwell upon. He gave to his pupils an appreciation of worth and an insight into the unchanging basis of its stability.

Dr. Drisler's devotion to Columbia College was as beautiful as it was intense. As *Plato*, in the boldness of his imagery, personified the laws of Athens, so Dr. Drisler gave flesh and blood to the historic college which for generations has stood for conservative progress and for well-balanced opportunity in learning. He loved Columbia as he served it—with his whole nature. To him its name was not an empty word, but rather the symbol of whatsoever is true, whatsoever is lovely, whatsoever is of good report. Loyalty to Columbia, to its traditions, its policies, its hopes, its ideals, was of the very fibre of his being.

Dr. Drisler put off his academic honors and dignities as gracefully as he had worn them. He laid aside his active duties as the captain of a mighty army sheathes his sword after the battle is won.

In the fullness of years he has left us,

“By the living and dead lips blest that have loved his name,
And clothed with their praise and crowned with their love for fame.”

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DURING 1897

(ARRANGED ACCORDING TO DEPARTMENTS.)

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UNIVERSITY STATISTICS.

The following statistics, illustrating the rapid growth of Barnard College, are of interest in connection with the editorial on page 122:

1889-90	26	1894-95, Undergraduates	71
1890-91, Undergraduates	19	Specials	27
Specials	22	Graduates	19
Graduates	11	—	117
—	52	1895-96, Undergraduates	31
1891-92, Undergraduates	31	Specials	32
Specials	25	Graduates	33
Graduates	5	—	146
—	61	1896-97, Undergraduates	85
1892-93, Undergraduates	53	Specials	45
Specials	30	Graduates	49
Graduates	4	Music	24
—	87	—	203
1893-94, Undergraduates	59	1897-98 Undergraduates	110
Specials	28	Specials	46
Graduates	18	Graduates	58
—	105	Music	20
		—	234

The following is the registration in the various schools of the University, February 1, 1898. It must be borne in mind that the total registration, 2,209, represents only students receiving instruction in the various schools of the University proper. To this may properly be added, in order to represent the whole educational field which the University controls, the number of students receiving instruction at Barnard College, 234, and those receiving instruction at Teachers College, 281. The relation between Teachers College

and the University is explained in an editorial (page 120). The terms of the agreement between Teachers College and the University are given on pages 150-2. The total number of students under the educational control of the University is, therefore, 2,724, without reckoning the pupils in the school of observation and practice and the extension classes connected with Teachers College.

REGISTRATION.

The College: Seniors.....	49	
Juniors	55	
Sophomores.....	91	
Freshmen.....	107	
Special Students.....	26	
	—	328
The Faculty of Law: Third Year Students.....	94	
Second Year Students.....	134	
First Year Students.....	136	
Special Students.....	2	
	—	366
The Faculty of Medicine: Fourth Year Students.....	143	
Third Year Students.....	151	
Second Year Students.....	189	
First Year Students.....	220	
Special Students.....	44	
Old Curriculum Student...	1	
	—	748
The Faculty of Applied Science: Graduate Students..	8	
Fourth Year Class..	69	
Third Year Class...	63	
Second Year Class.	86	
First Year Class....	179	
Special Students...	18	
	—	423
The Faculty of Political Science.....		77
The Faculty of Philosophy.....		118
The Faculty of Pure Science.....		53
		—
		2,113
From Barnard College*.....		67
Auditors		29
		—
		2,209

* Receiving instruction in the University faculties.



J. C. Havemeyer

COLUMBIA UNIVERSITY BULLETIN

JUNE, 1898

XX

THE DEPARTMENT OF HISTORY IN COLUMBIA UNIVERSITY

WITH the foundation of the Seth Low professorship in history and the appointment of a professor, the Trustees further enlarged the department of history in this University, so that now it is second to no other in its scope, while in the matter of equipment as to library facilities it is superior to most. In the whole University, there are eight professors and instructors of history. It offers thirty-four courses to the students of the College and University, and eleven more, if those given in Barnard College and Teachers College be included. These last are, however, with the exception of those on methods of teaching history, to some extent identical with certain courses given elsewhere in the University. The announcement made in the pages of the catalogue displays the extent of the ground covered and the fulness of treatment. American history, as is just, stands preëminent in the attention it receives; but European history, mediæval, modern and contemporaneous, is thoroughly and fully treated. It will be observed that the courses are of three kinds—disciplinary courses, courses intended to stimulate the student, and courses of research, the two former

classes for undergraduate and the last for both undergraduate and graduate students. Careful attention has been given in the arrangement of work to securing a broad and solid foundation of instruction, wherein special emphasis is put both upon the unity of history and upon the fact that its division into epochs is a mere expedient to facilitate investigation. While the ultimate aim is to secure such work as will add to the sum of historical knowledge, special care is taken to give a comprehensive view of the whole, and of the just relation of the parts to it and to each other. The dividing line is clearly drawn between history as a discipline in all its respects, literary, scientific, and philosophical, and the cognate but separate study of government and public law. But the department includes that which connects these one with the other, to wit, the history of political theories and political philosophy.

The members and friends of the University will be interested in certain advantages which it possesses for students of history, and which entitle it to a position in the front rank of its sister institutions. These are three in number: the carefully elaborated system of instructing those who wish to become specialists; the extended scheme for the study of our origins; and the opportunities for historical research in New York City.

Training for specialists.—This comprehends the study of methods, the use of original courses, and the treatment of books. Careful attention is paid in certain courses to the latest theories as to the labors of erudition and criticism which must precede all historical writing of value, to the collection and use of material from archives, and to the relative values which should be set upon various classes of publications that contain philosophical outlines, monograph studies, or works of narrative and interpretation. The collection and use of bibliographies is a matter which receives careful attention. Again, in the various private and research classes, known as seminars, the student prepares themes under the supervision of the professor; and these are read, discussed, and amended

in the presence of those who are pursuing similar lines of research. Finally, there is regular personal training of every candidate for the doctor's degree who desires it, in the preparation of papers based upon original authorities. These investigations are not necessarily such as are likely to throw new light on disputed topics, although preferably they are conducted with that purpose, but the chief aim is to select such subjects as can be studied to the best advantage from sources that are full and accessible. The purpose of this personal contact between professor and student is to launch the intending specialist upon his independent career with sound views as to how, from his own point of view, he should choose his field and how he should treat the various classes of authorities from which material can be secured. At the same time he has the opportunity for questions and for making good such deficiencies in his training as he may note in the advance of his work.

The study of American origins.—Throughout this department of instruction stress is laid upon what may be called the inclusive side of American history. It is shown that the discovery was a historical process and not an accident; and throughout the period of exploration and settlement the movements of European history are carefully developed in relation to their bearing on the historical evolution of civilization on this continent. In the same way, it is believed that American colonial history should be studied from the standpoint of universal political and constitutional history. In that way alone will the main currents of events within the period and its true significance as a whole be seen. Of prime importance, then, is the knowledge of the development of the English constitution. Americans should study the history of England not only for its own sake, but also and chiefly as an introduction to the study of our colonial period. They should in particular familiarize themselves with the constitution as it was in the time of the Tudors and early Stuarts. They should note the form which political conflicts took within the constitution. The relations between England and her me-

diæval dependencies should be an object of attention. The commercial policy of England after the Restoration, and the conflict with France which developed in connection therewith, should be studied with especial care. It should be remembered that during this entire period our history is not only American, but English. We have to do here with the expansion of England. A maritime empire was slowly taking form, and of this the American continental colonies were an important part. The affairs of the colonies were, to a large extent, administered by the English executive. The functions of the officials, courts, and administrative boards concerned in this work cannot be understood without a knowledge of the organization and powers of the English executive. From time to time Parliament, using its own discretion, passed laws for the regulation of colonial affairs. Its interposition was only occasional; that of the executive was continuous. Only by tracing the action of the British government, through both its executive and its legislature, can a knowledge be obtained of the loyal relations existing between the colonies and the mother country and the development they underwent. The growth of the system of imperial control over the colonies, which will thus be revealed, marks a central line of development in our colonial history, a knowledge of which is necessary to the perception of the unity of the period.

The colonial or American side of our history prior to the Revolution is even more important than the imperial. It will be shown by tracing the development of colonial government—the corporation, the proprietary provinces, and the royal provinces. Their origin, internal organization, relations the one to the other, and the changes through which they passed, constitute the framework of our domestic history during the period in question. It is believed that the nature and history of these political organisms can be understood only in the light of the English institutions from which they sprang. They were English institutions, worked by Englishmen, but under new and strange conditions. They therefore underwent modification. The study of the different types which appear,

and of the changes which were wrought in them as a result of the comparatively free development through which they passed, will reveal the origin and nature of our early domestic institutions. Here again, though amid considerable variety, certain fundamental tendencies will be found at work, which give unity to the internal development of the colonies. These, where unchecked, led naturally toward greater independence of the mother country. But they were checked to a greater or less extent by the assertion of imperial control in each of the lines of governmental activity. As time went on imperial administration tended to become more systematic and inclusive. Its growth, together with the conflicts which arose in consequence of the application of its restraining influence to the colonies, constitute the central thread of our colonial history. By following it the essential unity of the period will be discovered and a satisfactory explanation of its leading phenomena will be found. At the same time the relations between the executive and the legislature in the provinces will be brought into clear relief.

Upon the ideas thus outlined the graduate instruction given in Columbia on American colonial history is based. It is a period upon which much has been written, but often to little purpose. Notwithstanding the vast literature which exists upon it, it is by no means understood or adequately treated. This is due to a variety of causes. One of them is the failure of the national government and of many of the commonwealths to print their records and to make accessible the rich stores of material which exist in England. It is largely for this reason that to-day American scholars know almost nothing of the system of British colonial administration, while scarcely any attempt has been made to trace the internal development of the colonies between 1690 and 1760. As it is vain to hope that Congress or the state legislatures can be induced within a reasonable time to order the printing of the records under their control, it is urged that students should devote themselves to the task of working out from manuscript sources the history of the first half of the eigh-

teenth century. That period is practically virgin soil. Purely original work can be done in it and rich harvests can be reaped. The material is near at hand and accessible, though largely in manuscript. The publication of a series of thorough and able monographs on this period will surely open the way to a more systematic study of early American history. It will be brought out into proper relief, while much important material will be contributed toward the history of Greater Britain. The correct point of view will also be attained from which to treat the American Revolution.

In treating this historical material the colony and the imperial policy—so far as this affected the colony—should be the first objects of attention. To these the history of local institutions should be properly subordinated. Social and economic forces should be treated as contributing to and thus conditioning historical development, but the historian must never lose sight of the fact that they operate within a framework of law. His fundamental divisions of the period and his classification of this subject should thus be based on the facts of law and polity. This will lead to the abandonment of the old classification by sections,—northern, middle, and southern colonies,—which is essentially economic in its character, and to the substitution of a classification which is based on the forms of colonial government. The period, then, when viewed mainly from the colonial standpoint, will be treated under the divisions of the corporation, the proprietary province, and the royal provinces. Each of these varieties of colonial government will be subjected to comparative study, irrespective of the section of the country where it appears. At the same time, however, due weight should be given to the social and economic causes operating upon it. It is believed that only by pursuing a course like this can the history of this period be effectively and systematically treated. We are accustomed to classifications of the subject which are based on economic causes, also on forms of local government. We are too familiar with writers of commonwealth histories who laud their state or section as if it were the centre about which the

universe revolves. All of this leads to confusion. It begins nowhere in particular and it ends practically where it begins. The great need in the treatment of this period is correct general ideas. Only by attaining and adhering to these can the confusion which besets the subject be removed. The points wherein these twenty colonies—more or less—as political structures resembled one another, as well as those wherein they differed, must be ascertained, and in the light of these their development must be traced. We must go back to the the origins and foundations, and follow in our building the models which have been set for us by the great historians of the Old World.

As soon as the period is studied in this way, it will be seen that English law, administration, and policy furnished the basis upon which proceeded the development of the time. This is emphatically true of the provinces; it is also to a large extent true of the New England colonies. When the history of British colonial administration is brought into its proper connection with the internal development of the colonies, this, of course, becomes still more evident. What the colonists did they accomplished by building on the British foundation. By the proper recognition of this fact two important results will be secured. In the first place, American colonial history will be taken out of its isolation and will appear as a natural outgrowth of the history of Europe. The institutional, and hence organic, connection between the Old World and the New will thus be seen, while at the same time the large degree of freedom which the colonies enjoyed in their development will become evident. In the second place, the period will be treated as it ought to be, with reference chiefly to English law and precedents. The ideas and prepossessions which have arisen since the beginning of the colonial revolt will not be allowed to control judgments passed upon its events. It will be seen that here the historian has to do largely with certain mediæval survivals, prominent among which are the feudal nature of the province and the close connection between church and commonwealth in New England. These can be

understood only by reference to the conditions and ideas from which they took their rise. As the conditions were neither modern nor democratic, the best preparation for studying them will be obtained, not from American history in the nineteenth century, but from the history of England during the middle ages and the centuries of transition which immediately followed their close. In the light of these studies it will be seen that the period in question is that of the old régime in America.

The opportunities for historical research in New York City.—Plutarch tells us that he lived in a little town where he was willing to continue in order that it might not grow less. "But," he observes, "if any man undertake to write a history that has to be collected from materials gathered by observation and the reading of works not easy to be got in all places, nor written always in his own language, but many of them foreign and dispersed in other hands, for him undoubtedly it is in the first place and above all things most necessary to reside in some city of good note, addicted to the liberal arts and populous, where he may have plenty of all sorts of books."*

Hitherto Boston, with Cambridge, has been the only American "city of good note, addicted to the liberal arts and populous," where the exacting student of history might with some hope of satisfactory results be encouraged by the presence of books to undertake research even in European history. For there only could be found a great urban collection which had been enriched by the treasures of opulent book lovers, and a venerable university library, developed under the supervision of a group of professional scholars. But now, with the consolidation of the two most famous collections in New York, strengthened by the Tilden foundation and under the direction of a librarian of world-wide reputation, we need no longer look with envy upon the advantages of Boston. Our own University will, we may hope, very soon rival Harvard in the completeness of its outfit for historical work. We may perhaps have no more volumes than two or three other uni-

* *Life of Demosthenes* (Clough's translation, vol. v., p. 2).

versities, but we are justified in assuming that what we have are unusually well selected. It is our good fortune to possess a library which has grown rapidly from a very poor one into one of the foremost in our land. At the beginning of the year 1889, to go back no farther, it contained scarcely ninety thousand volumes. Now the accession book shows over two hundred and forty thousand. Almost all of these have, moreover, been carefully chosen with a distinct view to their usefulness for the purposes of the scholar. We have taken no risks on job lots and are hampered with very little third-rate theology, and very few out-worn grammars and arithmetics; our editions are in general the most recent.

While a great deal still remains to be done in order to satisfy the legitimate demands of the historical investigator, no one can pass through our admirable new book stacks without realizing that the foundation has already been laid for a truly magnificent collection. One can already find upon the shelves most of the great and costly sets to which the student must constantly turn. For example, the *Collection de documents inédits* (circa 240 volumes); the publications of the *Société de l'histoire de France* (circa 220 volumes); Bouquet's *Recueil des historiens de la France* (32 volumes); *Monumenta germaniæ historica*; *Monumenta hungariæ* (75 volumes); *Fontes rerum austriacarum* down to 1885 (44 volumes); *Monumenta boica* down to 1876 (43 volumes); Muratori, *Rerum italicarum* (30 volumes); *Fonti per la storia d'italia*; *Monumenta historiæ patriæ*; *Recueil des historiens des croisades*; *Corpus scriptorum historiæ byzantinæ* (49 volumes); *Publications de la société de l'Orient latin*, including the *Archives*; *Collection de chroniques belges* (84 volumes); the publications of the Utrecht Historical Society; *Archivio storico italiano* (110 volumes); *Archivio veneto* to 1890 (40 volumes); Migne's *Patrologia*, the three collections, embracing 471 volumes; Mansi's and Hardouin's collections of the Councils, the Annals of Baronius and Raynaldus, the Papal *Regesta* now in course of publication by the French School at Rome, and

many other general and special collections. There are, however, a few serious gaps to be filled. We have not, for instance, the *Acta sanctorum*, the *Collección de documentos inéditos para la historia de España*, the collection of documents published by the Russian Historical Society, Grævius's *Thesauri*, and many works essential to the study of the Church. It is hoped, however, that most of these may be procured in a short time.

In addition to the works mentioned above we have a full set of the *Moniteur*, the *Bulletin des lois*, and indeed the debates and legislative decrees of a considerable number of important states of Europe, as well as nearly all of the collections of treaties. The divisions of the library relating to the cognate subjects of public law, jurisprudence, economics, sociology, and anthropology are excellent. That of literature is less satisfactory, but it includes many sets indispensable to the historical student. A recent bulletin issued by the New York Public Library indicates that Columbia possesses in the Avery Library a really remarkable list of local archaeological and historical proceedings in France and other European states.

For the history of England we have now the more extensive collections, such as Hansard's *Debates*, the *Blue Books*, Rymer's *Fœdera*, and a complete set (lacking one volume) of the great series of *Chronicles and Calendars of State Papers* published by the Master of the Rolls (268 volumes). The most valuable single collection which the Astor Library possesses is the Journals of the Lords and Commons, complete down to 1854 (185 volumes). The Astor Library has also a goodly number of the proceedings and collections of the Archaeological Societies (both general and local) of England, with some of those of Scotland, Ireland, and Wales. It is making, and will continue to make, British local and municipal history a speciality. Both the Astor and the Columbia Libraries are well supplied with the secondary works on English history and with biographies and memoirs.

Turning to our own history, we find remarkable advan-

tages for its study here in New York. As to the Lenox Library, the statement published in 1892 in *Notes on Special Collections in American Libraries* (prepared by Lane and Bolton for *The Harvard Bibliographical Contributions*, No. 45) is still satisfactory, with the following additions: the Robinson collection of works on American local history and genealogy; the Bancroft collection of books and manuscripts; a large collection of maps and atlases relating to American cartography, and a collection of early American newspapers. It probably has now the best collection of American local histories and works on genealogy in existence. Its cartological collection is probably excelled only by those at Washington and Cambridge. The Bancroft collection is rich in printed and manuscript materials concerning American colonial and Revolutionary history. It already has the largest collection of early newspapers in the city. The Spanish MSS., the Chalmers Papers, and those of Samuel Adams form the most important features of its collection of manuscripts.

The Columbia Library has an excellent general collection, including the Colonial Records and Archives complete, very nearly all the publications of the various historical societies, and most of the state histories. For the study of more recent national history the equipment is fairly complete, though something yet remains to be done for the period between the formation of the constitution and the civil war. A good deal of attention has been paid to the decades of the civil war and reconstruction, and practically all published material has been obtained. Other notable features are the large number of regimental histories, and particularly the remarkable Townsend collection of newspaper clippings, which is indispensable to one dealing with the period. As the time approaches when hitherto unknown materials for the history of this period will become available, it is the purpose of Columbia to take particular pains to perfect its accumulations.

The New York Historical Society is also strong in local history, genealogy, and newspapers, though its manuscripts

would not ordinarily be available for students. It undoubtedly possesses one of the best collections on colonial and Revolutionary history in the country, and on the history of New York State and City it surpasses all others. Unfortunately, this library is not at present very accessible to students. The Library of the Bar Association possesses a large collection of colonial laws, embracing nearly all the reprints of all the colonies. It may be remarked incidentally that the student in New York can always make the easy excursion to Philadelphia, where all the treasures of the Pennsylvania Historical Society are free and open to every earnest worker. The sad loss of Mr. Stone will, we may assume, make no change in the generous policy of the library. Mr. Gregory B. Keene, his successor, will, we may be sure, gladly extend his aid to anyone who asks it.

In order that the vast undertaking of bringing together in our city the materials for scientific historical research may be the more surely and speedily accomplished, a provisional and informal arrangement has been entered into between Columbia and the New York Public Library, dividing the field to be covered. While each library will continue to buy freely in all branches of history, each will aim to render its collections complete as far as possible in certain specified departments. For example, it is not necessary for us to possess an original copy of the *Jesuit Relations*, as there is one in the Lenox Library. There is, as is well known, a great deal of expensive and rare Americana which is referred to so rarely that it need not be duplicated. In the same way two collections of works relating to British municipal history are unnecessary in New York. On the other hand, Columbia can deal better, perhaps, with the intricate bibliography of the continent of Europe.

One of our first cares will be to render our collections upon the German Reformation and upon the French Revolution and Napoleonic period complete beyond anything to be found outside of Paris and the British Museum. We have not neglected England or the United States, as the books above men-

tioned prove; but hereafter the aim will be to fill in the standard works still missing and add new publications in those fields, rather than to render the collection one upon which a contribution like Professor Gross's *Gild Merchant*, for example, could be based. For such work the specialist will betake himself to the Public Library. In Continental history, on the contrary, no pains will be spared, after securing the monumental works that are of interest to every student, gradually to seize upon every pamphlet, journal, and dissertation which has to do with the history of Western Europe. We want files of the newspapers of the French Revolution, and will garner in the political pamphlets which so long served the purpose of newspaper editorials. The satires of the Lutheran period, the *Remonstrances* of the French *parlements* and all similar material will be diligently sought for when it has not been reprinted. The most exhaustive bibliographies, general and special, constitute the ideal toward which we intend to work.

While keeping pace with the current publications of importance in all fields of history, and adding steadily to the fund of older material, as the second-hand book catalogues bring it to our attention, we hope always to have some special country or period in mind, with a view to filling out one by one the standard bibliographies, such as Waitz-Dahlmann's *Quellenkunde* for Germany, Potthast's lists for mediæval European history, Professor Sloane's bibliography of Napoleon, and similar comprehensive catalogues.

When in any subject, the material shall be, if not complete, at least so abundant as to justify the publication of a bibliography, it is proposed to issue a bulletin for the benefit of historical students, giving a working list, with an indication of the whereabouts of each work, if it is to be found in any one of the great Eastern libraries. This will serve to invite the attention of the teachers in the smaller institutions to the advantages here, and enable the isolated investigator to learn exactly where to apply for a needed volume.

To one familiar with the stupendous mass of books bearing

upon history printed during the last four centuries, the hopes here expressed of forming a library which may one day enable us to carry on original research in European history in this country with the same ease that we might in London, Paris, or Berlin will seem chimerical. It should be remembered, however, that the printing of the manuscript sources is being carried on with unprecedented energy, and that already there is a vast accumulation of readily available material waiting to be exploited. Not only are continual additions being made in the conspicuous national collections of Germany, France, Austria, Italy, Belgium, Spain, and the rest, but unnumbered local historical associations and individual writers are adding their contributions of *documents inédits*. Motley could write a better history of the Netherlands in our commodious seminar rooms to-day than he did fifty years ago from the Archives of Brussels and the Hague.

Much more could, of course, be said as to the treatment of the history of the United States, which is nowhere more carefully and fully appreciated in the scheme of historical study, especially in its contemporary epoch; the field of English and Continental European history, too, is comprehensively and for some periods minutely treated. But, after all, the best exposition of the University's work is found in the statement of its courses, and by perusing the list of these it is hoped that our readers may get a just view of the aims and equipment of the department of history in Columbia.

WILLIAM M. SLOANE
HERBERT L. OSGOOD
WILLIAM A. DUNNING
JAMES H. ROBINSON

ADDRESSES AT THE FLAG-STAFF CEREMONIES

ON the afternoon of May 7, 1898, a large and handsome flag-staff, with a pedestal of granite and bronze, was presented to the University by Lafayette Post. The ceremonies were attended by Lafayette Post, by the Trustees and faculties of the University, and by a large number of students. In presenting the flag-staff to the University, General Butterfield spoke, in part, as follows :

“In behalf of Lafayette Post, Department of New York, Grand Army of the Republic, I now dedicate this standard and pedestal, knowing it will keep bright the memories of those who in the navy guarded our inland seas and ocean coasts, and fell in defence of the flag. I dedicate it knowing it will recall memories of those who in the army fought for our hill-sides and valleys and plains, and fell in defence of the flag. I dedicate it assured that it will bring heartfelt gratitude to those who on land and on sea fought for the Union, and fell in defence of the flag ; who on land and on sea fought for their country, and for the authority of the Constitution, and fell in defence of the flag ; also, to those who are now in arms at their country's call, and who stand ready with their lives, their fortunes, and their sacred honor to do their duty.

“President Low : Our services of dedication are ended. I hold in my hand a list of the gallant sons of Columbia, who in years past, from its foundation in 1754 down to the commencement of the existing war in April, 1898—beginning with Thomas Marston, a graduate of 1758, who was a member of the Revolutionary Committee of 1775 ; and including such distinguished alumni of Columbia as John Parke Custis ; Harman Rutgers of the Continental Army, killed in the battle of Long Island, 1776 ; Major General Alexander Hamilton of the United States Army, who was upon the staff of General Washington ; Jacob Morris, of 1775, an Aide-de-camp to General Greene ; Ogden Hoffman, of 1812, Midshipman in the United States Navy ; a De Peyster,

Captain in the United States Army; a Kearney, Colonel of Dragoons and Brigadier General in the Army, and Governor of Vera Cruz, and of the City of Mexico during the war of 1848; another Kearney, the famous brave and gallant "Phil" Kearney, a Major General killed at Chantilly at the age of forty-seven in 1862; the brave General Ellis, killed at Gettysburg; and the noble Richard Tilden Auchmuty, breveted for gallantry at Gettysburg; F. Augustus Schermerhorn, breveted for gallantry at Five Forks, who gave his splendid yacht to the Government a few days since; General Stewart L. Woodford, now on his way to us from Spain; General Henry E. Davies of the class of '57, who won his stars as a Major General at the point of his sword in the war for the Union; Henry Ketteltas, of the same class, breveted for gallantry at Shiloh, Chickamauga, and Missionary Ridge; Alfred T. Mahan, who went from here to graduate at the Naval Academy in '59, and so through the long list in the staff and other departments. Time does not permit to name them all, although included with the list are members of our Post, and the names of such distinguished families as the Jays the Morrisises, the Kings, and members of your faculty now with you, the Surgeon General of the Army, and others. These names are reminders that it needs not this flag, it needs not eloquence nor words of patriotism, for the purpose of inculcating in the sons of Columbia a spirit of devotion to flag and country. That seed has been well planted here, and will continue in the future as in the past to bring forth its fruits. I recall with pleasure and pride your own noble and eloquent words upon the historic field of Gettysburg, and your glorious tribute to the gallant 14th Regiment of Brooklyn, to-day again in the field at its country's call. I fully realize what effect the words and example of your administration of Columbia will be. It suffices to give you for Columbia this tribute from our Post of veterans. May it perform the double duty of saying to you, to the young men assembled here, and to those who will come in the future, that

our veterans, and the veterans of the Grand Army of the Republic, appreciate the service of Columbia's sons for that flag, and have full confidence that the glorious service of Columbia's sons in the past will be always repeated in the future.

"Accept it, sir, with our trust that the historic loyalty and devotion of Columbia to our country and flag, its prompt response to every call and requirement therefor, will continue to add to the rolls of honor to be emblazoned upon the walls of your splendid and historical institution of learning. It is yours, the gift of our comrades to Columbia.

"Accept it, sir, and may blessings and prosperity ever rest upon you and upon Columbia in future as in the past, while you adhere always to the principles and spirit it illustrates and calls forth; *and may God bless Columbia.*"

In response President Low spoke as follows:

"General Butterfield, Commander, and Comrades of Lafayette Post: When Lafayette Post, only two years ago, at the dedication of this site, gave to this University the national colors, and made the promise, so generously fulfilled to-day, of this lofty and noble staff from which our country's flag now proudly flies, it did not seem likely that within so short a time the United States would be at war. The flag that we then received at your hands was the more precious to us, nevertheless, because, in your presence, we could not forget that our flag is what it is by reason of the self-sacrifices that have been freely made for its sake; and because we rejoiced to receive the flag from men who had themselves fought for what it stands for, under its inspiring folds. It was not, therefore, in careless mood, but most reverently and earnestly, that, in receiving the flag at your hands, the men of Columbia University promised to "love, cherish, and defend it." More quickly, I dare say, than any of us then thought probable, the time has come when you may judge in what spirit the Columbia of to-day is likely to redeem that pledge. As you have yourself pointed out, sir, we should be false to all our traditions were we to be backward in responding to the call of the country at such a time as this. But there has

been no hesitation. The University has already surrendered four of its officers to the public service, and has charged me to see that not one of them suffers by reason of his absence at his country's call. The captain of the University crew has handed in his resignation that he might go out with the naval militia; and the students have accepted, uncomplainingly, this heavy blow to an interest that is very dear to their hearts. Scarcely a regiment or a naval battalion has volunteered from these parts that has not counted in its ranks one or more of our students; and others stand ready to follow when the call comes. I do not know how many have gone in all; but enough, certainly, to bring home to those who are left a realizing sense of the paramount claims of the country, and to assure you that your trust in the men of Columbia has not been misplaced. I must be permitted, also, to refer with pride and gratification, as the President of the University, to the patriotic act of Mr. F. Augustus Schermerhorn, both an alumnus and a trustee, who in the present emergency has freely given his yacht to the government, as in the days of '61-'65 he offered his life. He was breveted, as you have said, sir, for gallant conduct at the battle of Five Forks; and he is breveted now again, by the public voice, as a citizen worthy of high honor, because he has chosen to give this vessel to the government at a time when he might have sold it to the government at a high price. These are the things that show Columbia's spirit; and they show, I am glad to believe, the same lofty patriotism that has animated the men of Columbia from the beginning.

“ But if this flag and staff make an especial plea to our patriotism, that is only a part of the service they will do for us. They will inspire the scholar at his desk and the graduate in his office, no less than the volunteer on land and sea. The country needs men willing to die for it; but it also needs men willing to live for it. The country has need of sound learning, of fearless investigation, of patient study and reflection, no less than of the service that can be rendered in the day of battle. No hope can live in the atmosphere of this

University, no ambition can be cherished here, that will not gather fresh inspiration from the sight of this staff and banner, with their silent but eloquent summons to the constant service of the country and of mankind. Was there ever a flag before in the world's long history that stood for so wide a sympathy with the downtrodden and oppressed—that meant so much of help and hope to the weak and the discouraged? Nor can I doubt that, as we look upon our country's flag, the feeling of gratitude will be deepened in us all, for the blessings of civil liberty and for the opportunities for study and for usefulness that abound in the wide land over which float so caressingly the Stars and Stripes. I am confident, therefore, that all our life in the University will be the deeper, the broader, and the richer because of this flag and the staff that you have given us. If this be so, what more can you ask? You have added to our life as a university some touch of the earnestness that strengthens purpose; some breath of the sympathy that constrains to an unselfish life; some sense of the loyalty that elevates and ennobles all who submit themselves to its influence. For all this we thank you; and again we pledge ourselves to you who have given to us this staff and this beautiful and precious flag, the flag of our beloved country, that in peace and in war, in war and in peace, we will love, cherish, and defend it."

PREPARATORY SCHOOLS AND COLUMBIA COLLEGE

AT a time when Columbia College is abundantly prepared to receive more students than she now has, it is appropriate to consider the relations existing between us and the schools that send us our students. Three facts are evident: (1) that we are at present drawing material only from a very limited area; (2) that we get our students, to a very marked degree, from private rather than from public schools; (3) that we are careful to ask schools to recommend students to us in some

detail, guaranteeing that they have been properly trained, but that, in return, we have no machinery for putting ourselves in direct and regular communication with preparatory schools, and for reporting to them the extent to which these "guaranteed" boys are found capable of college work. I should like briefly to touch on each of these points.

(1) A good idea of the limited area from which the College draws students may be obtained by comparing a Freshman class at Columbia with one at Harvard. The classification of students by states may be found in the reports of the president of each institution, but it is easier to grasp the situation when we realize that at Harvard 54 per cent. of a Freshman class comes from places more than fifteen miles away; at Columbia, only 21 per cent. Further, at Harvard 41 per cent. come from places more than fifty miles away; at Columbia, only 7 per cent. That is, we get 93 per cent. of a Freshman class from those parts of New York, New Jersey, and Connecticut that are within a radius of fifty miles. This extraordinary circumstance is said to be due to the lack of a dormitory system and to defects in our athletic tradition. These are probably the true causes; but unless there is a marked widening in the very definite area from which we draw students, it seems evident that the College should inquire with great care into the educational conditions current in this area, and do its best to adapt its entrance requirements to the needs of this definite area.

(2) A more important group of facts concerns the schools from which our boys come. Cornell draws 76 per cent. of its students from the public schools; Harvard, 29 per cent.; Columbia, only 11 per cent. The following table, which I have drawn up from the matriculation books, shows the percentage of students prepared by public schools, private schools, and tutors, respectively, in the Freshman classes entering in 1890-97.

The increase in students from the public schools in the last two years seems to me to be largely due to the scholarships open to Brooklyn students.

YEARS	PUBLIC SCHOOLS	PRIVATE SCHOOLS	TUTORS	TOTAL
1890	5	64	9	78
1891	10	64	9	83
1892	4	56	4	64
1893	9	42	5	56
1894	3	61	0	64
1895	8	55	4	67
1896	12	75	11	98
1897	18	78	11	107
Total	69	495	53	617
Per cent.	11	80	9	

Under these circumstances, it appears to the writer that the College should undertake to establish closer relations between itself and the public schools nearby. We should, it seems to me, ask ourselves whether there is anything in our entrance requirements that shuts us off from a large class of desirable students. According to the report of the Commissioner of Education for 1893-4, a year midway in the series I have selected for illustration, the public schools of the United States prepared 40.9 per cent. of the students entering colleges. In the North Atlantic States the average was 46.5 per cent. In the same year there were 14,988 students prepared for college by public schools. Does Columbia get her fair proportion of such students?

(3) A third interesting fact concerns the small number of the private schools that furnish so large a number of our students. In the class entering last autumn 26 per cent. of the students from private schools came from two schools, the Columbia Grammar School and Trinity School. Six schools furnished 50 per cent. of these pupils.

It is evident, then, that the steadiest stream of our pupils comes from certain private schools. All these schools are in New York City, within a few miles of us. The College should, it seems to me, always be open to the inspection of these schools. Teachers in them should be familiar with our requirements, our policy, our methods. Pupils should be so familiar with the traditions and the ways of our student body that they would enter Columbia College as naturally as they would pass from one class to another of their own school.

On the other hand, our instructors should be in regular communication with the school authorities. We should report to them the progress of the students whom they send to us. We should inspect these schools, department by department, at regular intervals, in a spirit of friendly coöperation, so that their boys shall not only come to Columbia naturally, but with a training that will enable them to profit most by their college life.

To the writer these three groups of facts seem to point to the necessity for examining carefully the workings of our present entrance requirements. Certainly the second and third groups show that we are not making the most of our surroundings. It is evidently very hard for public school boys to enter Columbia. It is equally clear to me, though I have not given the evidence in detail, that our relations with our main fitting-schools are very unsatisfactory. In my opinion, a careful enquiry into the character and administration of our entrance requirements would afford strong grounds for the adoption, in whole or in part, of some form of the certificate system.

G. R. CARPENTER

COLUMBIA NON-GRADUATES*

IT is a curious fact that the most distinguished alumnus of Columbia was never graduated. Alexander Hamilton entered King's College in 1773 and left in 1776 to enter the Continental army as a captain of artillery. Since his day, many other men who have been unable to finish the full course have attained distinction; yet in many instances their achievements have cast little lustre on the College, from the fact that their temporary connection with the institution has been overlooked or forgotten. It was a praiseworthy act to print a list of the men who have matriculated in the College and yet have left, for one reason or another, before re-

* See *Catalogue of Matriculants who have not graduated*, 1758-1897.

ceiving a degree. A son does not cease to be a son because he has journeyed to a far country, and it may make him feel a little more like one to know that his relationship is appreciated. And as there is more joy over the finding of the one sheep that was lost than over the ninety and nine who stayed at home, so there is much pleasure in looking over this list and discovering so many long lost brothers whose strawberry marks had become obliterated, but whom we are glad to recognize and to welcome. General John Watts De Peyster, '40, was thirty-two years in receiving recognition of his attainments from his Alma Mater, which conferred the honorary degree of A. M. upon him in 1892. He was, even then, more fortunate than many others of equal prominence, for whom no fatted calf was slain.

Not a few of these wandering sons of Columbia became famous captains. There was General Henry M. Judah, U. S. A., also of '40, who was graduated from West Point in 1843 and served through two wars, and whose pursuit of Morgan in his raid into Ohio and Indiana was a brilliant campaign. Col. Augustus Van Horn Ellis, '44, raised the 124th N. Y. Volunteers and was breveted Brigadier-General for gallantry at Gettysburg, where he was killed in action. Another ungraduated Columbia man who received a brevet for gallantry in the same battle was Lieutenant-Colonel Richard Tilden Auchmuty, '51, who has since gained a more lasting fame by founding the New York Trade School. Others who saw active and honorable service are William W. Van Ness, '42, Chief Quartermaster of the Army of the James; Brevet Brigadier-General Charles Henry Hoyt, U. S. A., '45; Lieutenant-Commander L. Howard Newman, U. S. N., '48; Captain and Aide-de-Camp Philip Clayton Rogers, '48; Brevet Lieutenant-Colonel F. E. McIlvaine, '50; Captain and Brevet Lieutenant-Colonel of Volunteers Thomas William Channing, U. S. A., '52; Captain T. P. McElrath, U. S. A., '55; Captain and Brevet Major R. M. Sawyer, U. S. A., '55; Captain and Brevet Lieutenant-Colonel Henry Keteltas, U. S. A., '57, who was twice breveted for

gallantry; Captain and Brevet Major F. D. Ogilby, U. S. A., '61, also twice breveted for gallantry; Lieutenant Horatio Potter, Jr., U. S. A., '64, Brevetted Major of Volunteers for gallantry; Captain Thomas Freeborn, 1st N. Y. Mounted Rifles, '62.

Three men on this list served on the Southern side during the Rebellion. One of them was General Alexander Robert Chisholm, '55, the New York banker.

Captain Alfred T. Mahan, U. S. N., left the class of '58 at Columbia and was graduated at the U. S. Naval Academy in 1859. Thus Columbia can claim at least a share in the training of that profound student and greatest writer on naval subjects. Captain Charles King, U. S. A., might have been graduated at Columbia in 1865 instead of at West Point, but then we should probably never have read his delightful and characteristic stories of army life, for they would not have been written.

It is thus interesting, and perhaps significant, to note that four men who left Columbia and became eminent in the profession of arms—Hamilton, the statesman; Mahan, the naval historian; De Peyster, the military historian; and King, the military novelist—gained even greater fame with their pens. Another Columbia man, who became an author without becoming a soldier, is John Fox, Jr., '89, although he is not without experience as a fighter, and has seen active service on the police force of Big Stone Gap, Virginia.

Dr. Henry Feltus Quackenbos, '38, in addition to the other things that made him famous, served as brigade surgeon in the French army in Algiers. Another famous physician and scientist, whom few suspect of being anything of a Columbia man, is Robert Ogden Doremus, '42; yet Columbia shares the honor of his maternity with the New York University.

Among the men who have achieved distinction at the bar, without completing their college course, are John D. Townsend, '52; Abram J. Dittenhoefer, '55; and Judge George C. Barrett, '55, of the Appellate Division of the Supreme Court

of New York. In the church, Bishop John Hobart Brown, '52, of Fon du Lac, and the Rev. Henry Van Rensselaer, '72, Society of Jesus, left Columbia before graduation. Lockwood de Forest, '72, the artist, was a Columbia man for a time; so was John Johnson, '79, the artist, now in Paris; so was William Ordway Partridge, '85, the sculptor. Professor George Benton Newcomb, '56, of the C. C. N. Y., was partly a Columbia man; so was Professor Adoniram Judson Huntington, '42, of Columbian University, Washington, D. C.; so was Worthington Chauncey Ford, '79, Chief of the Bureau of Statistics, Treasury Department. Of men who have risen to eminence in the financial world, and who are of, though not generally associated with, Columbia, it is interesting to note the names of William H. Vanderbilt, '41, of John A. Stewart, '42, President of the Union Trust Company, and of Frederick Newbold Lawrence, '54, President of the New York Stock Exchange, 1882.

The foregoing list is typical rather than exhaustive, especially as the names of non-graduates are given only since and including the class of 1836.

H. G. PAINE

THE TEACHING OF ANATOMY

THE anatomy and physiology of man, the doctrine of the structure of the machine and its function, constitute the groundwork upon which the specialized professional education of the medical course is based. We are fortunate at Columbia that in the framing of the four-year curriculum sufficient time has been devoted to the presentation of these subjects in the first two years of the course. The Department of Anatomy has additional grounds for congratulation in the fact that the wise and liberal administration of the University and the generosity of the friends of the College of Physicians and Surgeons have made it possible to construct an anatomical course for medical students in accordance with the demands of modern scientific progress.

Among the special departments of the professional schools in our large universities, the one charged with the teaching of human anatomy to medical undergraduates has felt perhaps more than any other the broadening influences which have resulted from the biological advances of the last decade. Human morphologists, and especially the teachers of human anatomy, have for more than a century occupied a somewhat peculiar position in relation to their subject of study. Able and careful investigators have for generation after generation devoted themselves to the elucidation of the structure of the human body in its minutest details, and the results of their labors make man to-day morphologically the best known vertebrate. Nevertheless a glance at the current anatomical literature will convince that even to-day, with modern methods of investigation and broader generalized views of vertebrate structure and development, our knowledge of man's anatomy is receiving constant and important additions. Revision of the field, however carefully it may appear to be gleaned, results in addition to our morphological knowledge of our own species. To the teacher of human anatomy the best and most productive method of imparting this accrued knowledge becomes a question of vital interest and importance.

At the very outset it becomes apparent that lasting knowledge is only to be acquired by direct personal study and examination of the object itself. Charts, drawings, and models, schematic or natural, and even photographs, however valuable they may be when used as accessory means of illustration, fail absolutely in replacing the actual structure for purposes of study and instruction. In developing the anatomical course at Columbia this cardinal principle of sound anatomical teaching has formed the basis upon which the details of the course have been built. The College of Physicians and Surgeons was the first medical school to abandon, in 1889, the system—universally in vogue at that time—of confining didactic instruction in anatomy to lectures to large audiences, and to substitute teaching by demonstration of the actual object to small sections of the class. In no other way can the sys-

tematic instruction be made what it should be—a commentary on and aid to the practical work of the individual student, in the only place in which he actually *learns* his anatomy, the dissecting room. Since that day we have steadily progressed along the lines then laid down. When we began, the anatomical instruction at the College consisted of three didactic lectures a week, and dissection was voluntary and not regulated. To-day twenty-four hours a week are given to section-teaching in addition to the lectures. Through the generosity of the Vanderbilt family, the dissecting room has been enlarged to nearly twice its original size, and affords space for over five hundred students working at the same time. The quantity and quality of the practical work done by each student is carefully supervised and regulated, and the department is enabled to exact the test of a rigid annual practical examination on the cadaver from every candidate for the degree. With this material increase in the time devoted to anatomical instruction, and with the enlarged facilities for thorough practical work, the best method of utilizing these opportunities becomes a question of serious importance.

Early in the constructive period of the present anatomical course the value of employing comparative anatomy as an aid in the teaching of human anatomy was recognized, and during the past eight years systematic efforts have resulted in the production of an equipment which is increasing in value yearly with the further development of the Museum of Human and Comparative Anatomy. It is not our desire to debate the question whether comparative anatomy should find a place as a permanent and separate study in the medical curriculum, nor can we consider in detail the value of preliminary biological work to the student intending to follow medicine as a profession. We are rather brought face to face with the situation which confronts us at all our great medical centres, where annually a large number of students, differing widely in kind and degree of preliminary training, are brought together and enter at once upon the study of human anatomy. The very wealth of our knowledge here

proves a source of embarrassment. The current text-books deal with a superabundance of minute detail, the smallest arterial twig and the most insignificant process of bone receiving the same amount of space and attention as the more important and cardinal structures.

The student is apt to find himself at a loss and overwhelmed, and it is difficult for him to follow the guiding lines in his anatomical studies—lines dealing primarily with the main structural facts of the different systems and capable of subsequent enlargement to include secondary details. The study of anatomy is, after all, the study of a mechanism, complicated and interdependent in its different parts, and adapted to perform certain functions. In teaching these facts comparison with other scientific mechanical studies may be permitted. It would universally be regarded as a faulty system, if a student of mechanical engineering were called upon at the outset of his course to consider the complicated mechanism of a modern locomotive, or the expansion engines of an ocean steamer, before he had become familiar with the simple principles of the cylinder, piston, and boiler in structure and action, or if a course in applied electricity began with the dynamo before considering the properties of the magnet. And yet, to a certain degree, it is equally faulty to begin at the outset of the medical course with the structure of a highly developed and specialized vertebrate like man. The logical alternative is an introductory study of the simpler morphological conditions presented by the lower vertebrates—in other words, a comparative anatomical course. For this, however, conducted systematically, the time available in the medical curriculum does not suffice. If all our students came to us with a preliminary biological training in the anatomy of the lower vertebrates, the question would be a simple one. As it stands, however, we are forced to adopt a middle course—to utilize to the fullest possible extent the aid which comparative anatomy so clearly affords in explaining the often complicated structural conditions encountered in human anatomy. The question is sometimes asked, by

graduates of ten years' standing or more, "What practical use is comparative anatomy to the medical student?" The answer is far more readily given by a demonstration than in words, and yet a single example may be cited. The anatomical nightmare, which without doubt every medical graduate vividly recalls, is the human peritoneum or lining membrane of the abdominal cavity. Taken by itself, it is appalling in its detail and complexity. The text-books teem with minute descriptions and representations of it. Its divisions appear, as red and blue lines, in all manner of possible and impossible sections of the body. Its surgical and pathological importance render it a dangerous thing to neglect, but a correct knowledge of its extent and ramifications is difficult to obtain even by the most careful study of the cadaver. And yet, with all its complexity in adult man, the arrangement of the membrane is surprisingly simple and evident in many of the lower vertebrates, presenting permanently in these forms the simpler conditions which characterize the human membrane only during certain of its temporary embryonal stages. An hour's study of the intestinal tract of a carnivore or marsupial, and the comparison of the same with the conditions found in the human subject, will do more towards putting matters clear in the student's mind than months of work with text-book and cadaver.

It is in this sense that comparative anatomy can be used to the greatest advantage in the teaching of human anatomy. It is teaching by comparison with selected vertebrate types, not instruction in systematic zoölogy, which will produce the best results. For the purposes of the medical student of human anatomy the zoölogical status of the forms which help him to appreciate complicated and difficult structural details is a matter of secondary consideration. He may find what he requires in representatives of any one or of several of the vertebrate classes. In dealing with certain broad subdivisions of the subject, and as an introduction to the study of special systems and organs, such as the circulatory, respiratory and uro-genital tracts, portions of the digestive system and its ap-

pendages, etc., it is of distinct value to consider the phylogeny of the structures under discussion in a serial manner, proceeding systematically from the lowest vertebrates to man. In no other satisfactory manner can we demonstrate the position of the organ or complex in the entire animal economy, and the physiological value of the whole and of its parts, revealed so clearly and evidently by the morphological modifications encountered in the various groups.

In this portion of our work we use frequently, with great satisfaction, photographic projections of the actual preparations, when a series of considerable length is to be brought before the class and the individual groups connected in tracing an organ through successive stages to the highest degree of development or reduction. In this manner it is possible to offer a bird's-eye view of the subject, reserving a limited number of selected forms for the subsequent detailed demonstrations. We are exceedingly fortunate at the college in being able to avail ourselves of the services of Dr. Leaming, and the educational departments are greatly indebted to his skillful and scientific management of the department of photography.

The question as to the proper time and place for the introduction of the above outlined instruction is naturally closely associated with the distribution of the topics in a two-year course in Human Anatomy. The opportunities afforded by the new curriculum enabled us to solve the problem in as nearly satisfactory a manner as seems possible. One of the greatest advantages was obtained in the complete pedagogic separation of elementary and advanced students. The first-year student does not attend any lectures in anatomy. During this year the instruction consists in practical demonstrations to small sections of the class, dealing with the entire anatomy of the extremities and with the bones, joints, muscles, and blood-vessels of the head and neck, including also part of the peripheral nervous system of this region. In direct connection with the demonstrations extensive practical work in the dissecting room is required. The first-year stu-

dent also attends a series of demonstrations constituting the "preliminary visceral course," designed to afford that general information regarding the body cavities and their contents which is requisite to the correct appreciation of the concurrent instruction offered by the departments of physiology and histology.

In the second year, the laboratory work continuing, the student attends demonstrations to sections of the class in the anatomy of the central nervous system, organs of special sense, and cranial nerves. The entire second-year class attends three lectures a week on the anatomy of the body cavities and viscera. The preparations illustrating these lectures are, in the afternoon of the lecture-days, demonstrated again separately to sections of the class, enabling each student to study and inspect the same closely. In this way an opportunity is given to make the anatomical lecture what it should strive to be, not an attempt to teach anatomy at long range to several hundred men at once, but an occasion for presenting the broad morphological principles upon which the animal organs, apparatus, and systems are constructed. Here the significance and importance of the structural peculiarities of man can be accentuated, illustrated, and explained in all their bearings by contrast with the corresponding structures of the lower vertebrates.

A series designed to teach the evolution of a complicated human organ, through successive stages, from the simple and rudimentary form found in the lower vertebrates, attracts the student's attention and interest from the outset. He is offered actual facts and preparations, not dry statements or schematic drawings; and the knowledge cannot fail to be more readily acquired and more thoroughly assimilated. "Seeing is believing," in anatomy perhaps more than elsewhere. Conversely, many structures appear obscure and ill-defined in human anatomy on account of regressive modification or degeneration during evolution. Their significance and the reason for their existence can be made clear only by direct reference to and comparison with the corresponding parts in

forms in which they are fully developed and physiologically active. The nomenclature of anthropotomy contains many terms which the student accepts, without ever clearly recognizing the reasons for the distinctions which they imply, unless the corresponding structures in other forms are brought before him, in which at a glance the correctness and significance of the names used appears. A "globus major" and "minor" with an intermediate "body" might readily be considered almost uncalled for divisions of the human epididymis, and yet certain important structural features of the organ relate to the distinction thus made. A moment's study, on the other hand, of the corresponding parts in a marsupial will place the entire arrangement of the duct in an absolutely clear light, and will abundantly justify the descriptive terminology of human anatomy.

Again, the whole subject of variation from the accepted normal type in human anatomy depends for its rational explanation upon comparative and developmental illustration. Nothing is more difficult or unsatisfactory than the acquisition of knowledge in the form of dry statistics, and considered by themselves the variations in anatomy are little else. On the other hand, a flood of light is shed on these conditions and a live interest imparted to them, if they can be made to demonstrate man's relationship to other vertebrates, to accentuate facts in human evolution, and to illustrate the unity of plan in vertebrate structure.

But beyond the direct and practical connection between the study of human and comparative anatomy, a broader purpose is achieved by combining them in the medical course. Only a few years ago many facts in comparative anatomy, evolution, and heredity were the scientific property of only a limited number of special investigators. To-day the biological advances of the last ten years have extended to include a much wider circle. The educational influence of universities and scientific institutions, by well planned museum exhibitions, by public lecture courses, and in many other ways, has reached beyond the immediate group of

special students. In his relation to the community at large the physician is still preëminently the man of science. He should, as a matter of liberal scientific education, possess a general knowledge, founded on his university course, of the more important structural relations of man to the remaining vertebrates, such as will enable him to express an intelligent opinion on questions of general morphology.

It is quite evident that the institution must command the requisite material for illustration in order to carry out the system above outlined. The progress of the last eight years in this respect has been gratifying. The morphological museum began its development in 1890 in one of the small rooms in the cellar of the south wing. Columbia to-day possesses an equipment which, while it still falls far short of the ultimate design, yet is unequalled in the beauty and clearness of the preparations, and in the complete character of the series most extensively used in the courses of instruction. The first and second floors of the new anatomical building are designed to be the permanent home of the museum, and provide ample floor and gallery space. It is the confident hope of the department that here the future growth of the collection will be as rapid and healthy as it has been in the past under less favorable surroundings. Unfortunately, however, it was found necessary at the time the anatomical building was erected to leave out the equipment, and the department is to-day in urgent need of cases for the two floors. The old cases inherited from the pathological museum are overcrowded and have to be used merely for storage. The museum loses one of its most important educational features in not being accessible for purposes of serious study in its present condition. It is not possible to carry out the systematic serial exhibition which is the fundamental principle in the application of the collection to the instruction of the student. Moreover, even for the simple purposes of storage the available shelf room has been exhausted, and large numbers of very valuable preparations are of necessity left entirely unprotected, subject to unavoidable deterioration by dust and

breakage. The department earnestly hopes that this necessary portion of the equipment may soon be completed.

With all the advances in extent and methods of anatomical instruction which the last few years have brought to us, there still remain projected improvements which we trust the future will realize. It is very true that a state of complete satisfaction with results already achieved is an unhealthy symptom; there will always be motion in some direction, either in advance or retrograde. A notable requisite to the rounding out of the morphological instruction of the curriculum is a systematic course in practical vertebrate embryology, equally important in the purely scientific and in the practical respect. The growing importance of the subject cannot be overlooked. A thorough knowledge of the development of the human body is not only an immense advantage in the study of the normal adult anatomy and physiology of man, but embryology is connected closely and in a practical sense with nearly all the great clinical departments of instruction; midwifery, pathology, surgery, and medicine all deal with the normal processes of development and with the results of abnormal deviations from the usual course. It is unquestionably of great importance to afford our students the opportunity of obtaining systematic instruction in this branch, to combine the scattered and fragmentary teaching of the different departments in a regulated course.

The course should be designed with especial reference to the requirements of the medical student, and combine from the outset the study of the processes of development in the vertebrate embryo with the consideration of the clinical results of the arrest of development at different stages in man. In this respect the Museum of Human and Comparative Anatomy and the Pathological Museum offer invaluable opportunities for increasing the scope and pertinence of the instruction. Laboratory work in practical embryology should be associated with the study of serial preparations of the lower vertebrates, presenting permanently conditions which are temporary embryonal stages in the higher forms. Com-

bined with this should be the study of the congenital malformations and of the pathological conditions exhibited in man as a result of arrest of development or deviation from the normal type. In like manner, the clinical aspects of pregnancy, parturition, and involution should receive most important elucidation through the opportunities which the course would offer to study practically the normal and abnormal morphological conditions of uterus and placenta during and after gestation. The value of such a course would be great, both in the general scientific education of the medical student and for the acquisition of sound and detailed knowledge of important practical facts.

When we look back over the material advances which the medical school has made as part of a great university system, fostered by a broad and liberal administration, and favored by the public-spirited generosity to which we owe our present magnificent equipment, it cannot be doubted that the near future will see our projected improvements accomplished facts.

GEORGE S. HUNTINGTON

THE FIRST COMMENCEMENT OF KING'S COLLEGE, 1758

THE first Commencement of King's College was thus described in the *New York Gazette* of June 26, 1758.

“On Wednesday last (21st June), being the day appointed by the Governors of King's College in this City for the Commencement, I had the pleasure of being present at the *first* solemnity of the kind ever celebrated here, which was through the whole conducted with much elegance and propriety. The order of the procession from the Vestry Room, where the College is now held, to St. George's Chapel, was as follows: The President with his Honour the Lieutenant Governor, who graced the solemnity by his presence, were preceded by the candidates for Batchelors and Masters De-

grees, with their heads uncovered, and were followed by the Governors of the College, the Clergy of all denominations in this City, and other gentlemen of distinction of this and the neighboring Provinces.

“After short prayers suitable to the occasion, the Revd. Doctor Johnson, the President, from the Pulpit, opened the solemnity with a learned and elegant *Oratio Inaugurationis*. The exercise of the Batchelors were introduced by a polite salutary Oration, delivered by *Provoost*, with such propriety of pronounciation, and so engaging an air, as justly gained him the admiration and applause of all present. This was followed by a metaphysical Thesis, learnedly defended by *Ritzema*, and opposed by *Ver Planck*, and *Courtlandt*, with another held by *Recde*, and opposed by two *Ogdons*. The Batchelor’s exercises were closed by a well compos’d genteel English Oration, on the benefits of a liberal Education, delivered by *Courtlandt*, whose fine address added a beauty to the sentiment, which gave universal satisfaction to that numerous assembly. After this, Mr. *Treadwell*, in a clear and concise manner demonstrated the Revolution of the Earth round the Sun, both from Astronomical Observations, and the theory of Gravity, and defended the Thesis against Mr. *Cutting*, and Mr. *Witmore*, a candidate for the Degree of Master of Arts. This dispute being finished, the President descended from the pulpit, and being seated in a chair, in a solemn manner, conferred the Honours of the College on those pupils who were candidates for Batchelor’s Degrees, and on several Gentlemen who had received Degrees in other Colleges.

“The Ceremony was concluded by a Valedictory Oration in Latin, by Mr. *Cutting*, universally esteem’d a masterly performance. The President then addressed himself in a solemn and pathetick exhortation to the Batchelors, which could not fail of answering the most valuable purposes, and leaving a lasting impression on the minds of all the pupils. The solemnity being finished by a short prayer, the Procession turned back to the *City Arms*, where an elegant entertainment was provided by the Governors of the College.

“This important occasion drew together a numerous assembly of all orders, and it gave me a sincere pleasure to see the exercises performed in a manner that must reflect honour upon the College, and invite every friend to his Country to promote so useful, as well regulated an Institution.

“(The writer of the above wishes the Printer to insert it in his papers.)”

The first Commencement of Columbia College, after its reorganization in 1786, was thus described in the *New York Journal* of April 13, 1786:

“On Tuesday last (11th) was held the first Commencement of Columbia College; and the public with equal surprise and pleasure, received the first points of reviving learning, after a lamentable interval of many years.

“The Honorable the Continental Congress, and both Houses of the Legislature suspended the public business, to support the important interests of Education by their countenance, and grace the ceremony by their august presence. The procession moved from College Hall about an half an hour after eleven in the forenoon, in the following order: The Scholars of the College Grammar School, according to their Classes. The Students of the College, according to Classes. The Professors of the University. His Excellency the Governor, and Chancellor. The Honorable the Senate. The Honorable the Assembly. The Regents of the University.

“When they arrived at St. Paul's Church, the place appointed for their Graduation, the Reverend Mr. Provost introduced the Solemnity of the day by performing Divine Service.

“Mr. Cochran, Professor of the Greek and Latin languages, was appointed to call up the speakers in their proper order.

“Mr. *De Witt Clinton*, the first candidate who spoke, addressed the audience in an elegant Latin oration, *de utili-*

tate et necessitate studiorum artium liberatum, which he finished with a polite and well adapted *salutation*, in the same language, to the Members of Congress and of the Legislature; to the Regents and professors, and to the audience at large.

“Mr. *Philip (H.) Livingston* spoke on the *importance of Commerce*. Mr. *George Livingston*, on the *usefulness and necessity of the knowledge of the laws of our country*. Mr. *Abraham Hern*, on the *impolicy and imprudence of a Republic's aiming at being a conquering Nation*. Mr. *John Bassett*, a *dissertation on the descent and independence of the Algerines*. Mr. *Peter Steddiford*, on *national prejudices*. Mr. *Samuel Smith*, on *patriotism*.

“The above mentioned young gentlemen, together with Mr. *Francis Sylvester*, then received the testimonials of their having been admitted to the degree of BACHELOR of ARTS, from the hands of Reverend Mr. Gros, Professor of Geography, etc., who was appointed to deliver them; after which Mr. *Sylvester* spoke an oration, on the *passions*, which he finished with a pathetic *valedictory* addressed to the different public bodies, and his fellow students. The whole was concluded with a prayer.

“We do not remember ever to have seen such a concourse of people as met upon this auspicious occasion, who seemed universally delighted with the performance of the Candidates, equally honorable to the teachers and themselves.”

KING'S COLLEGE IN THE AMERICAN REVOLUTION. II

THE part taken by college men in the American Revolution was chiefly along three lines of activity—literary, political and military. In each of these phases the men of King's were to be found contributing much to the strength and advancement of one party or the other. Many measures of influence and acts of valor are accredited to them, from the time

of the Stamp Act Congress down to the taking of the British redoubt at Yorktown. Year by year college friendships and class ties yielded before the demands of patriotism and a higher duty; and the student, the lawyer, or the merchant sought to defend his beliefs in the army, in politics, or in the more attractive field of letters.

A common type in the earlier period of the Revolution was the literary politician, who, in the drafting of instructions for town representatives, in the preparation of legislative documents, and in the frequent despatch of directions to official agents abroad, had ample opportunity for the formal expression of his views. Their range of influence was often increased by publication in pamphlets, newspapers, and broadsides, while the theses maintained in them were further strengthened, and the discussion enlarged, by volunteer writers in party organs and in fugitive essays. Indeed, the pamphlets of the Revolution form in many respects an adequate history of the opening of the struggle.*

None of the discussions by these early writers was more prominent than that in which the patriot side was maintained by the young Alexander Hamilton, whose college life had so suddenly given place to public service, and in which the Tory side was upheld by another college man, probably the clergyman, Isaac Wilkins†, of the class of 1760. These two men, both natives of the West Indies, joined issues before a divided population still open to conviction, upon a subject so momentous as the propriety and wisdom of supporting the Continental Congress and its revolutionary measures. The discussion of such a topic necessarily became general, and the anonymous pamphleteers of local renown became characters of much prominence and wide influence.

* For a consideration of the literature of the period see *The Literary History of the American Revolution*, by Professor Moses Coit Tyler (2 vols., N. Y., 1897). For a further discussion bearing upon the general subject see an article by Professor Herbert L. Osgood on "The American Revolution," in *The Political Science Quarterly*, XIII, 41-59.

† The authorship has been claimed also for Bishop Samuel Seabury, Yale, '48, an honorary graduate of King's in 1761. A discussion of the point appears in J. Sabin, *Bibliotheca Americana*, No. 78, 581.

The first Continental Congress met at Philadelphia in September, 1774, and then began under the leadership of such men as John Hancock, of Massachusetts, Christopher Gadsden, of South Carolina, and John Jay, a King's man of 1764, the work which finally was to organize and guide the movement toward Revolution. The first task of these patriots was the conversion of their countrymen to their own views and proposals. That this was the attitude in which they appeared before the country was made manifest on the appearance, in the middle of November, of the *Free Thoughts on the Proceedings of the Continental Congress*, a paper in which Isaac Wilkins began a rambling, and in parts scurrilous, attack upon the purpose and competency of the Congress, the effect of its acts, and the honesty and sincerity of its members. He made a vigorous complaint, over the signature of "A. W. Farmer," against those who were endeavoring, through illegal conventions and irresponsible committees, to enforce the Revolution and its program upon the entire population. He attributed the disorder and insecurity of the times to the radicals at Philadelphia, and their followers in the various provinces; and he urged the farmers of Westchester to arise against all such enemies of the public welfare, to stand loyally by their King, and the royal governor, and the ancient principles of the English Constitution. The appeal was made to self-interest, and the call for party patriots was sent forth. But in the effort at argument and in his attempt to inspire his brother "farmers," Wilkins could not free himself from the hard facts of the situation; and in summing up his case he threatened that "should any pragmatical Committee-gentleman come to my house and give himself airs, I shall show him the door, and if he does not soon take himself away, a good hickory cudgel shall teach him better manners."

It was of the greatest importance, in the judgment of such loyalists as Wilkins, that the Continental Congress should be discredited. Wilkins, therefore, promptly returned to the attack in a screed entitled *The Congress Carvassed*. In this he attempted further to bring into disrepute the men who

"met in a Grand Continental Congress at Philadelphia, and became the object of Grand Continental Attention." The comfortless spectre of committee absolutism was thrust before the country reader; and he was urged not to be "bullied by a Congress," but to exercise his right of political judgment and so assure himself the safety and prosperity which could be attained only by following the "Farmer's" advice.*

In averting any of the ill results which might come from such efforts and in placing the Congress in its proper light and authority before the people, the most effective work was done by the young student, Alexander Hamilton. Not only had Hamilton been able to study thoroughly the local political situation, but he had also visited Boston and knew well how to dispose of the plaint, reëchoed by Wilkins, "that God had made Boston for himself, and all the rest of the world for Boston." The Parliamentary acts of the spring of 1774 had made Boston the center of patriot interest and the object of general self-sacrifice. The cause of Boston had been made the cause of America; and into the justification of the city, and the encouragement of its supporters, and the defence of the Congress, Hamilton entered with energy and thoroughness in a pamphlet entitled the *Full Vindication of the Measures of Congress*.† With care and patience he reviewed the situation, endeavoring by frankness to disarm his critics and by terse conclusions to convince the doubting. The questions of Parliamentary taxation, of the treatment of Boston, of the methods of the Con-

* More pamphlets than those cited were produced by the same faction. Of their less important replies one by "A. Weaver" is reprinted from Holt's *New York Journal in Westchester County during the American Revolution*, by H. B. Dawson (N. Y., 1896), pp. 40-42.

† The full title was characteristic of the the times: "A Full Vindication of the Measures of Congress from the calumnies of their enemies, in answer to a Letter under the signature of a Westchester Farmer; whereby his *sophistry* is exposed, his *cavils* confuted, his *artifices* detected, and his *wit* ridiculed, in a General Address to the inhabitants of America, and a Particular Address to the Farmers of the *Province of New-York*. Veritas magna est et prevalebit—Truth is powerful and will prevail. New-York: printed by James Rivington: 1774."

tinental Congress, and many related topics, were discussed in a manner both easy and forcible. The effect of the advantage thus gained was not lost, for in February, 1775, Hamilton published a pamphlet of some eighty pages entitled *The Farmer Refuted*. The question of supporting the Congress yielded to the subject of the relations of Great Britain and the colonies; and almost every feature of the controversy was given its due weight in this candid, painstaking, and well-nigh conclusive argument for the patriot party and its measures. It is beyond the present purpose to discuss the detailed argument; but it is significant, in comparing the tone and the trend of the two writers, to note how the younger, and presumably the less learned, exhausting the material for technical dispute, made the appeal, thoroughly characteristic of the times, to a "higher law."*

It was high ground, both in morals and in politics, on which Hamilton stood; but his later life justified such a position, and the progress of the Revolution gave practical testimony to the fairness of his judgment and the effect of his argument. The success of his party, however, should not detract from the worth of that opponent who, having tried to obey his sovereign and to aid his country, and having found it impossible to reconcile the two duties, retired from the conflict. It was a sad, yet characteristic, note which Wilkins published in *Rivington's Gazetteer* in May, 1775. After reviewing his earlier course, he concludes thus: "I leave America, and every endearing connection, because I will not raise my hand against any Sovereign,—nor will I draw my sword against my Country; when I can conscientiously draw it in her favour, my life shall be cheerfully devoted to her service."

As the young student prepared to enter the American army and the clerical member of the New York Assembly

* "The Sacred Rights of Mankind are not to be rummaged for among old parchments or musty records. They are written, as with a sunbeam, in the whole volume of human nature, by the Hand of Divinity itself; and can never be erased or obscured by mortal power."

withdrew to England, other men of King's engaged in similar peaceful callings were likewise forced to decide whether they would be counted among the friends or the enemies of their sovereign. Thus, one of the College associates of Wilkins, Alexander Leslie, of '62, the Master of King's College Grammar School, became, in 1776, an "addresser" of Lord Howe, and two years later figured as a British ensign. Another student of those days, Rev. Henry Van Dyck, '61, is called to mind by the legislative act of 1784 permitting certain Tories to return to New York. Likewise, among the contemporaries of Wilkins was Rev. Epinetus Townsend, '59, who gave up his charge soon after the Declaration of Independence, and in October, 1776, was held as a prisoner at Fishkill. Of the men attending King's in Hamilton's day, Tory literature was indirectly represented in William Chandler, '74, to whose father, Thomas B. Chandler, Yale, '45, and an honorary alumnus of King's in '58, was ascribed the pamphlet, *What think ye of Congress now?* * Another Yale graduate, Rev. John Ogilvie, '98, seems to have received honorary degrees from King's in 1767 and 1770, and his son, George Ogilvie, was a member of the class of '74. The latter spent some time as a loyalist officer and assumed clerical orders only after his military work was done. In 1774 John Bowden, of '72, was ordained and given a convenient settlement as assistant rector of Trinity. Upon the outbreak of hostilities he retired to Norwalk, Connecticut, but returned to New York on its occupation by the British; later he served a church at Jamaica, and finally returned to the King's of peaceful times as Professor of Letters and Logic. It was also in 1774 that John Vardill, '66, who had been appointed tutor at King's in 1773, went to England for ordination. Declining to return to New York to become an assistant rector at Trinity, Vardill remained in England, having near him, as it would seem from letters of the time, a college friend in William Laight, of '67, and a political friend in

* See J. Sabin, *Bibliotheca Americana*, No. 11, 882.

Burke's colleague from Bristol, Henry Cruger,* who wrote of Vardill that he was "exceedingly clever, but must, *will be ministerial.*" Quite in contrast with Vardill, another King's man who was ordained in England the same year, Benjamin Moore, '68, returned to work for his college as acting President and as Professor of Rhetoric and Logic. And lastly there was no college man more prominent in the intellectual life than Samuel Provoost, of the class of '58.† Having completed his education at St. Peter's College, Cambridge, Provoost returned to New York, and held a position as assistant rector in Trinity until difficulty in squaring political belief with religious service impelled him to retirement and neutrality. Declining to connect himself with King's Chapel, at Boston, or to act as chaplain for the New York Constitutional Convention of 1777, he bore arms only after the British, in the autumn of 1777, had burned Kingston, then known as Esopus. At all events, he was able to maintain such an attitude as rendered it possible for him to become prominent afterwards as a Regent of the University of the State of New York, as a Trustee of Columbia, and as first Protestant Episcopal Bishop of New York.

The mention of those men who were so closely identified with these allied lines of work in the provincial capital, prompts at least an illusion to two other college men of that period who rendered aid to the Revolutionary cause and whose names have had some permanence in American educational life. Few to-day associate the name of Stevens Institute with the Revolutionary Treasurer of New Jersey, John Stevens, of '68, who turned from affairs of law to the more promising problems of steam transportation on land and water. In a similar way might be recalled the name of Henry Rutgers, '68,

* A student at King's in 1758; later Mayor of Bristol, England, as well as member of Parliament. There was published at New York in 1859 an address by Henry C. Van Schaack, *Henry Cruger: the Colleague of Edmund Burke in the British Parliament.*

† See Edwin R. Purple, *The Provoost Family in America* (N. Y.); and James Grant Wilson, *Samuel Provoost, the first Bishop of New York* (N. Y., 1887).

one of the benefactors of the college which then was known as Queen's, but which in later days has borne his family name.

In the Revolutionary times college men were also actively engaged in political as well as in literary work; and a feature in which both phases of provincial life were typified was "The Moot," a law club formed at New York in 1770. Among its older members were William Livingston and William Smith, both well known in college circles, and Benjamin Kissam, father of Kissam, '75; and among the younger associates were Egbert Benson and Robert R. Livingston, of '65, John Jay, 64, and Gouverneur Morris, '68. Beverley Robinson, '73, read law in the office of another member, James Duane; and under the office influence of Jay came, in addition to Hamilton, Thomas Barclay, '72, and Robert Troup, '74. The influence of such a club, both upon its members and upon the public, must certainly have been appreciable. Many deeds of national importance were done later by its members. Of the work accomplished before the Revolution was well advanced, none was so noteworthy as that of Peter Van Schaack,* of the class of '67, who in 1773 completed the official revision and compilation of the New York colonial statutes. The brilliancy of the young lawyer's early achievement was thrown into more distinct relief by the darkness of his later life when, burdened by serious personal affliction and overwhelmed by repeated deaths in his immediate family, he was denied the privileges of inoffensive neutrality and banished from his native land. His character and his position among his fellow men were defined by the way in which, after the peace, he sought once more the state for which he had done so much and for years thereafter led there an honored life, finally receiving the degree of Doctor of Laws from his alma mater in 1826.

As in the literary work much was done on both sides by college men, so in practical political life both sides claimed adherents from the men of King's. Thus, Samuel Bayard,

* There is a *Life of Peter Van Schaack*, by Henry C. Van Schaack (N. Y., 1852).

the friend of Governor Tryon, was Deputy Secretary of the Province; and Richard Nicholls Colden, '66, son of New York's postmaster and grandson of Cadwallader Colden, was an ensign in the 42d Highlanders from 1767 until 1772, and from then until his death in 1777 was Surveyor of Customs at New York. The Jauncey family, of pronounced political attachment, was represented in college circles by John Jauncey, '74; while Benjamin Kissam, '75, and Peter Kissam, '76, were sons of that elder Benjamin Kissam who gave Jay a portion of his legal training, and who rendered such efficient support in May, 1775, by holding the Provincial Congress firmly to ideas of reconciliation. Kissam found a congenial spirit at that Congress in Samuel Verplanck, a King's man of '58, and a Governor of the College. The latter was unable to keep with the party of revolution in all its program; and the Verplanck mansion at Fishkill was appropriated by the army to serve as the headquarters of Baron Steuben, and later became conspicuous as the birthplace of the Society of Cincinnati. Gulian Verplanck, '68, likewise went to the royal side, although twenty years after his graduation he entered the New York Assembly.* Two sons of the Royal Councillor, John Watts, John of '66 and Robert of '60, naturally took their places in the same party; while of those who need not be mentioned in detail some indication of political services in the times of discord appears in the rewards of office later conferred. Thus, Daniel Robert, '62, became Attorney-General of St. Christopher's; William Hubbard, '70, held important judicial offices in the province of New Brunswick; and Isaac Ogden, '58, who represented New Jersey conservatively in the Stamp Act Congress, was later made a Judge in the Supreme Court of Canada.

The membership of the Stamp Act Congress comprised also one of the Livingstons of New York, and, as one of the

* In a list of members of the "Social Club" in New York, disbanded in December, 1775, a British officer describes G. Verplanck as "disaffected," and John Watts as "doubtful."—J. G. Wilson, *Memorial History of New York* II., 474, note.

Connecticut delegates, William Samuel Johnson,* Yale, '44, son of King's first President, and the recipient of an honorary degree from King's in 1761. The younger Johnson was also a member of the next national assembly, the first Continental Congress of 1774, in which King's was more directly represented by John Jay. In later sessions Jay was joined by Morris and Benson; and these men, together with Verplanck and John Marston, '60, were elected to the provincial conventions of New York. The college men naturally took a direct share in the affairs of the city. Ritzema, Van Schaack and Jay were members of the committee appointed in November, 1774, to enforce the Continental "Association;" and the same men were in the general committee of April, 1775, in which also were Verplanck, '58, Marston, '60, Laight, '67, and Clarkson, '74, as well as older representatives of several families whose college members were of the younger generation. A powerful member of both these committees was Peter Van Brugh Livingston, who later presided over the Provincial Congress and the Constitutional Convention of New York, and who had already become closely identified with the college through his assistance as one of the managers of the college lottery, both in 1746 and in 1753. Another man who well may be called a college man, Leonard Lispenard, sat in the Committee of Safety and in the Provincial Congress. Lispenard in 1775 was locally prominent as Washington's host, and later became the Treasurer of the college to which already he had sent two sons. One of these, Anthony Lispenard, '61, the miller, is said to have been a militia captain, although connected with the Tory side by marriage into the Barclay family; and the other son, Leonard Lispenard, '62, the merchant, was the owner of Davenport's Neck.

No family represented in New York politics was more noteworthy than that of Livingston, from among whose members Philip "the Signer," Yale '37, shared in the founding of

* There was published in Boston in 1886 a new edition of *The Life and Times of William Samuel Johnson*, by E. Edwards Beardsley.

King's, and Philip the younger was a member of the class of '60. It fell to the lot of the second alumnus of the family, Robert R. of '65, to act as Recorder of New York City and, as a member of the Committee of Safety, to take part in the proceedings of the Provincial Congress, the Continental Congress, and the New York Constitutional Convention, and upon the adoption of New York's first constitution to enter upon almost a quarter century's activity as Chancellor of his State. His classmate, Egbert Benson, who appeared both in the Provincial Congress and in the Continental Congress, was likewise honored in 1777 by a unanimous election as Attorney-General of New York, an office which he held for a decade. Such other men as Richard Harison, '64, might add their share in making this feature of the life of the college men still more striking. The chief credit, however, which King's has gathered from the efforts of her sons, arose from the work of that trio, Jay, Hamilton, and Morris, who rendered such conspicuous service in both National and State affairs, at home and abroad. It should be unnecessary here to recount the incidents in the young Hamilton's early life and his faithful devotion to Washington throughout the war, the activity of Morris in local politics and with the National finances, or the work of Jay as a legislator, as Chief-Justice of his native State, and as the colleague of John Adams and Franklin in the peace negotiations.

Gouverneur Morris and Jay, in their political life, always had to feel that some associates of their college days were among their foes as well as among their friends; and so, as Hamilton persevered in the forlorn staff service, he must have been made to realize more than once that a picket line was between worthy men who in the early day, not so very remote, had met in friendly strife at the old college building. As that building was used by both armies, so the men of King's in military life followed two paths. Their lives formed a striking parallel. Thus, in the first class a single life typified, perhaps imperfectly, both sides. Rudolph Ritzema, the son of New York's dominie and trustee of

King's, secured a theological education in Holland and a military training in the Prussian grenadiers, and returned to New York to practice still another profession. Abandoning law for arms, he was appointed lieutenant-colonel, in June, 1775, of a New York regiment and later took part in Montgomery's expedition against Quebec. It was through Ritzema's letters of January, 1776, that the President of the New York Provincial Congress learned of the failure at Quebec, of Allen's capture and the death of Montgomery. The writer gave a vivid description of the state of the army, and appealed for "men and money, otherwise, by Heavens, Canada is lost." The later history of Ritzema is involved in some obscurity and, it seems, fortunately so, since he finally appeared as an officer in the British army, the command of his New York regiment having been given to Philip Van Cortlandt, a relative of Ritzema's classmate of the same name.

The patriot army claimed from the later classes John Grinnell, '62, who became a captain of Continental infantry, and Henry Rutgers, '66, who took part as a captain in the battle of White Plains, and later commanded a regiment. From the younger classes, John Doughty,* '70, seems to have been an officer in the Continental artillery of New Jersey; while his classmate, Stephen Lush, was a captain of New York volunteers in 1776, and served in 1777 as acting Judge Advocate of the Continental army; and another classmate, Philip Pell, ranking in 1776 as a lieutenant of New York volunteers, was in 1777 appointed a Deputy Judge Advocate, in the Continental army, and some few years later was advanced to the office of Judge Advocate General. In college with these men was John Copp, '71, who entered the New York quota of Continental infantry in 1775, went as a captain under Nicholson on the Quebec expedition, and continued in the army until 1779. From the class of '73 Cornelius Bogert appeared as a lieutenant in the New York independent forces; and a later stu-

* The record of John Doughty is typical in its uncertainty. Compare the General Catalogue, and Lorenzo Sabine, *American Loyalists*, I., 385.

dent, Jacob Morris, son of Lewis, "the Signer," is said to have acted as aid to General Charles Lee in the South, and later as aid to General Greene. The class of '74 was represented by Edward Dunscomb, who rose from a lieutenancy of New York volunteers in 1775 to a captaincy of Continental troops in 1780, and by Robert Troup, one of John Jay's law students. Beginning as second lieutenant of New York volunteers in 1775, Troup in the following year acted as aid to General Woodhull. In 1777 he was promoted to a captaincy, and took part in the Northern campaign as aid to general Gates, being present at the battle of Stillwater and at the surrender of Burgoyne. He became a colonel the same year, acting as Deputy Muster Master General, and in 1778 the Continental Congress appointed him Secretary to the Board of War.

Turning to the other body of contestants,* Samuel Bayard, '60, seems to have been a British captain; and Edward Antill, '62, was at the siege of Quebec, and for five years thereafter was lieutenant-colonel of a Canadian regiment. Antill's classmate, Alexander Leslie, was, if identity is correctly assumed, an ensign and later a lieutenant in the 82nd. The early classes, furthermore, were conspicuously represented by Captain Abraham De Peyster,† who was active in the Southern campaign and commanded the British force at King's Mountain after the death of Ferguson, receiving finally some reward in an appointment as Treasurer of the Province of New Brunswick. From equally prominent families came Richard Colden, '66, one of those who early saw military service, and Thomas Barclay, '72, who joined General Howe as a captain, was soon advanced to the grade of major, and in later years rendered his sovereign much political service. His classmate, Andrew Skeene, rose from the rank of subaltern in the 6th

* In connection with the position of this party, reference may be made to an article: "The Party of the Loyalists in the American Revolution," by Professor Moses Coit Tyler, in *The American Historical Review*, I., 24-45.

† It is stated that the King's alumnus of 1763 was this man. Another Abraham De Peyster, however, was a non-graduate of 1759.

dragoons to that of captain in the 9th; and another classmate, John King, appears to have served as an ensign, and later as a lieutenant in the 40th. Among the college associates of these men Frederick Philipse, '73, a brother-in-law of Roger Morris and Beverley Robinson, and a member of the New York Assembly, tried to maintain neutrality; but his estate was confiscated and he himself banished, and he became later a captain of British dragoons, as similarly his brother and classmate, Nathaniel, became a British ensign. Another classmate and relative, Beverley Robinson, a brother-in-law of Colonel Thomas Barclay and a law student under James Duane, was lieutenant-colonel of the "loyal American" regiment, commanded by the elder Beverley Robinson. The son withdrew, after the peace, to Nova Scotia, and later to New Brunswick. From the men of '74, Edward Cornwallis Moncrieff joined the forces in 1775 as ensign of the 38th, rising to a lieutenancy in 1777; and Schuyler Lupton seems later to have attained the same grades. James de Peyster was an officer in the King's American regiment; and William Chandler, '74, helped the royal cause as captain of Jersey volunteers, although in 1779 he was obliged to memorialize Lord George Germaine to the effect that for two years he had received no pay. More fortunate were those who entered the regular service, as did Thomas Groesbeck Lynch, Robert Auchmuty, '74, and Richard Auchmuty, '75. Other college men on this side might be mentioned, but a final type will suffice in the person of Samuel Auchmuty, '75, another son of Trinity's rector, Dr. Samuel Auchmuty, Harvard, '42, who was an honorary graduate of King's in 1767. The younger Auchmuty, joining the 45th as ensign, was present at most of the engagements in 1776 and 1777, and later, in India, South America and Ireland, gave to his sovereign a long life of active service.

Thus to the army and to the callings of less strenuous exertion were given the best years of many lives, in a service which is ample to show why it was that the Revolution meant much to the men of King's. They entered upon the con-

troversy divided among themselves; during its course they struggled as brother against brother; and out of it all they came with a strengthened devotion. It was a story of sadness, but its ending was one of hope; and although Auchmuty and Hamilton stood under different colors at Yorktown, the peace in large measure wrought that King's men were King's men still and friends again. When DeWitt Clinton, the representative of a coming generation, began work at King's, he found a college with honor and history, with hopes and traditions, and with a worthy reputation. When he was graduated from the college, a new age for Columbia and Columbia men was beginning. From then onwards King's was to be but a name, although a name which will suggest much as long as the permanence of our government shall give silent recognition to the work of Livingston and Morris, of Jay and Hamilton.

H. A. CUSHING

EDITORIALS

It is now two years since the University Press took charge of the BULLETIN, and placed it under the direction of the present Editorial Committee. During this time changes have been effected in the

The Columbia appearance and character of the BULLETIN. An University Quarterly endeavor has been made to render it, both in appearance and matter, of more interest; and the general approval which has been expressed affords encouraging evidence that the BULLETIN has served a useful and valuable purpose. With a view to improving its character and extending its influence and circulation, the trustees of the Press have now determined to publish it as a quarterly, and to place it upon a subscription basis, thus making it possible to issue a much larger edition and to secure a wider circulation. The official character of the BULLETIN will be preserved in the *University Notes* and *Summaries of University Legislation*; and the effort which has been made to give the publication a more literary character, by incorporating contributed articles upon historical subjects connected with the University and upon the several departments, will be continued. Greater attention will be paid to Alumni affairs, and it is desired to make the QUARTERLY a medium of communication between the University and the Alumni. Reports of the Alumni Associations and contributed articles by graduates will be gladly received. It is hoped that a very large proportion of those who have heretofore received the BULLETIN gratuitously will now become subscribers, not only for the purpose of keeping themselves informed as to University affairs, but to aid in maintaining a publication which is of great service to the University. When it is remembered that in addition to the individuals receiving the BULLETIN, it is also sent to all the important libraries, reading-rooms, and clubs in this country, and thus reaches a very large number of readers who would otherwise lack means of acquiring knowledge of the conditions at Columbia, it will be seen that the BULLETIN has been instrumental in giving wide distribution to information concerning the University—a result which will be still more effectually accomplished by the publication of the new QUARTERLY.

The presentation to the University of the national flag by Lafayette Post of the Grand Army of the Republic was one of the most striking and interesting incidents of Dedication Day, and it was then announced that the Post intended to present also a flagstaff sustained by a granite and bronze base. This intention was carried into effect on May 7, when General Butterfield, in the presence of the members of Lafayette Post, of the Trustees and faculties of the University, and of a large number of students, made the final presentation and raised the flag upon the permanent staff. While the occasion did not have the publicity which accompanied the flag raising on May 2, 1896, it was rendered equally impressive by the address delivered by General Butterfield, as Commander of the Post, and by the appropriateness of the moment. The terms in which General Butterfield spoke of the services rendered to their country by former students and graduates of King's College and Columbia were such as to make the present generation proud of their Alma Mater; and his address, parts of which are printed elsewhere in this number of the *BULLETIN*, is a noble record of patriotic devotion, all the more to be valued as coming from a disinterested authority. In accepting this final evidence of the generosity and sympathy of Lafayette Post, and of the close tie which binds the University to the national flag and all that it represents, the students and graduates of to-day, man for man, reiterate the pledge given by President Low to "love, cherish and defend it."

The publication, by the Committee on the General Catalogue, of a pamphlet containing the war records of students and graduates of Columbia who served in the army or navy of the United States during the War of the Rebellion, is of special interest at the present time. The list of 395 names shows how generously our men gave themselves to their country in the trying years of 1860 to 1865, and the record of their services presents a long roll of honor. That the spirit which dominated them still prevails in the University has recently been shown by the eagerness which the students have evinced to meet the demands of patriotic duty, whatever they might be, and by the desire on the part of the authorities to remove all obstacles to the performance of such duty. Both among students and graduates, so largely represented in all the militia organizations, it is plain that the spirit of loyalty which has characterized the College since the earliest days of the Republic has suffered no diminution.

The appointment of Professor John Bassett Moore to the position of Assistant Secretary of State at a crisis of such momentous importance, the unanimous confirmation of the appointment by the Senate, and the universal approval with which Professor John Bassett Moore it has been received by the public, afford the most gratifying tribute to the incumbent of the Hamilton Fish Professorship of International Law and Diplomacy. The University is fortunate that it is able to contribute to the service of the country a man so admirably fitted for the arduous and responsible duties which he has been called upon to perform. The severance of Professor Moore's active relations with the University even temporarily cannot be regarded without regret, but in lending his services to the government the University adheres to historic precedent; for Professor Lieber, who held the same professorship under another title during the War of the Rebellion, was the trusted adviser of President Lincoln, and Professor Moore will bring new honors to a chair which is already distinguished by his predecessor and by the statesman whose name it bears.

The Commencement which will be held on June 8 will neither be attended by the members of the legislature in a body, nor honored by the presence of the chief magistrate of the United States and his cabinet, as some former occasions have been, but to Columbia men it will be in one respect at least the greatest in the history of the College, since it will be the first to be held upon our own land and under our own roof. Necessarily it will be in a room temporarily adapted for the purpose, the Gymnasium, and before many years it is to be hoped that we may have a Commencement Hall which shall be in all respects what is to be desired; but there are few among our Alumni who will not realize that in acquiring a building of our own, in place of the Academy of Music and Carnegie Hall, for the holding of Commencement we have become freeholders instead of mere *uitlanders*. The University Council and the Alumni Council, recognizing the significance of this our first Commencement on the new site and our first in our own hall, have, with the concurrence of the President, arranged a new order of procedure. The formal ceremonies of awarding degrees and conferring honors will take place in the morning, as has been the custom of the College from its foundation until within the past few years. This will be followed by an

Alumni luncheon, to which all Alumni will be invited, meetings of the Alumni associations, and class re-unions. Later, there will be a presentation of the Mapes Memorial Gate and of the Class of '82 Gate, and a general meeting of Alumni in the Gymnasium with speeches by representatives of the College and of the different schools. In the morning, and again in the afternoon, the procession will be formed in the Library, and will proceed through 116th Street, the Boulevard, and 120th Street, to the Gymnasium. The new grounds and buildings afford an opportunity, and offer an inducement, for an assemblage of Alumni such as we have never before held, and from the interest already manifested it is evident that there will be a large attendance. At other universities Commencement has always been the occasion for a general gathering of Alumni, and for a renewing of class and college associations, but at Columbia the opportunity has heretofore been sadly lacking. Happily this is at length afforded, and the University now opens her doors in hospitality to her sons.

Frederick Christian Havemeyer, in whose memory Havemeyer Hall was erected, was born in the City of New York, February 5, 1807. In 1816, when nine years of age, he entered the classical school conducted by Joseph Nelson, known and remembered by many "Knickerbockers" now living as the blind teacher. In 1821 he entered Columbia College as a member of the class of 1825. He remained till the completion of his Sophomore year, when he left College to enter the refinery then conducted by his uncle and his father under the firm of William and F. C. Havemeyer, in Vandam Street. He was a public-spirited citizen, and served his full time as a member of the New York Fire Department. For many years he was trustee of the Public School Society, and president of the school board of the town of Westchester. He was a thorough Latin scholar, and was always deeply interested in the cause of education, giving his time and money freely for its advancement. He died July 28, 1891, at his home, Throg's Neck, Westchester County. An excellent portrait of Mr. Havemeyer forms the frontispiece of this number of the BULLETIN.

It is scarcely too much to say that the first academic year of the University upon its new site has in every respect realized the an-

ticipations with which it was regarded. From the very first day the work of the University has proceeded uninterruptedly, and with a growing consciousness on the part of both officers and students of the increased advantages afforded by the new conditions. The development of a stronger and more earnest life, in both a social and an educational sense, has already become apparent, promising much for the future; and, viewed externally, the growth of public interest in the University has been most marked. The event of the year, however, which stands out conspicuously, is the establishment by Mr. Joseph F. Loubat (Duc de Loubat) of the Gaillard-Loubat Library Endowment Fund, by the gift of property valued at upwards of a million dollars. This munificent endowment, coupled with President Low's gift of the Library building, places the work of the Library upon a firm foundation forever, and insures its maintenance and growth, whatever may be the demands upon the funds of the corporation. While the income of the fund does not become available during Mr. Loubat's lifetime, he has most effectually secured to the University the enjoyment of his bounty after his death, and his gift will always entitle him to be regarded as one of the University's greatest benefactors.

The magnitude of Mr. Loubat's gift, as well as its rather unusual form, has made it a subject of widespread and appreciative comment. It would seem that every newspaper in the country, from the *San Francisco Argonaut* to the *New Orleans Picayune* and the *Lewistown Evening Journal*, had given expression to its admiration for the generosity which prompted the endowment. "Princely" is the word usually applied to it, in singular disregard of the fact that only plain Americans are in the habit of giving away their millions. The editorial comments present an interesting variety. The *Tribune* remarks that the gift "will be highly gratifying, not only to all who take a keen personal interest in the University, but to the general public of New York. . . . It is a fact of great significance for the cause of sound scholarship . . . that an institution like Columbia, at so comparatively early a stage in its exemplification of the true university spirit, should be able to command such support." The *World*, in alluding to the gift as "a splendid example," says of Mr. Loubat: "He has laid down the principle that the great university of his native city

is a worthy object of the filial regard of all New Yorkers, and in completing the endowment of the Library he has set an example which cannot be too widely commended to the imitation of his fellow citizens." The *Times* and the *Herald* comment in similar terms, and the latter offers to its readers a form of trust deed as a means of facilitating the imitation of Mr. Loubat's example. The *Christian Intelligencer*, the *Church*, the *Christian at Work*, the *Independent*, and other religious newspapers take the occasion to draw a moral, the *Churchman* remarking that "it is certain that no teaching of the deeper lessons of life which Columbia can offer to its students will be more effective than this illustration, presented generation after generation, of the spiritual fruitage of great fortunes. However large the opportunities for original research which the Library may afford, the generosity on which its foundations rest must be its most impressive and searching service to the country." The *Boston Herald* evidently looks at the gift from a different point of view, for it announces that "Mr. Loubat sees Seth Low's million-dollar gift to Columbia, and goes him \$100,000 better;" while the *Lewiston Journal* observes: "Millionaires are going away exceeding glad in these days. Columbia University has just come into possession of \$1,100,000, the gift of J. P. Loubat for a library endowment. Can't Debs forgive him?" There seems to be a consensus of opinion among the Western papers that "If an American must be a duke, the Duc de Loubat will serve for a pattern." From this and other notices it is evident that admiration for Mr. Loubat's gift is not limited to New York, but is shared by the whole country.

Work on the new Gymnasium has been so rapidly pushed within the last few days that now, though the workmen are still in the building and will be, perhaps, for several weeks to come, the visitor may yet form a very adequate idea of what the completed structure will be like. This is true both of the Gymnasium proper, from which all the *débris* has been cleared away, and of the swimming pool in the sub-basement, directly beneath. In the former, particularly, workmen hardly trouble the sight-seer; he is practically unconscious of their presence. The Gymnasium may be seen to its best advantage from the visitor's gallery at the south end of the room. This gallery is elevated from the floor like a stage in the ordinary theatre, and the resemblance

to such an auditorium is further increased by the amphitheatrical shape of the hall and the balcony-like effect of the running track suspended some ten or twelve feet below the ceiling. Just now, before any of the apparatus has been put in position, the Gymnasium might pass for a vast concert hall which needs but the semi-circular rows of chairs in order to be complete. The two most noticeable things about the room are its great size and its cheerfulness. This bright, open effect, so unlike that of the ordinary, gloomy gymnasium, is produced partly by the pale yellow brick of the walls and of the great fluted columns and by the white ceiling, but chiefly by the numerous large windows that even the most dismal day cannot darken. The Gymnasium is the largest in the country; but so perfect are the proportions that, as in the Library, space is, as it were, swallowed up in symmetry, and calculations of height and of floor space serve but to confuse the mind. The impression from the whole is that of splendid, simple dignity. The room will be the object of general admiration on the day of Commencement, a function for which its size and appearance peculiarly fit it. Though, as has been implied, the work on the swimming pool has not so far advanced, it is possible, even there, to appreciate what it will be two months hence. The room is almost entirely finished in white Vermont marble, delicately veined with green; the double row of concentric columns about the plunge, the walls to half their height, the door-casings, all are of this cool, shining stone. The bottom and the sides of the pool and the floor of the ambulatory are also of white marble, though of a different kind. It must be said at once that, next to the Library, this room is the most striking feature of the new University. The vista, from the marble doorway, of the hall with its white floor and walls, and its gleaming pillars surrounding the semi-circle of the pool, is one on which the eye rests with ever-increasing pleasure. It was worth while for Columbia to wait so long for so rich a reward.

Under the regulations adopted by the Trustees the Gymnasium and pool will be open to all students, and to officers, fellows, and graduates. Owing to the very considerable cost entailed by the running expenses, it has been found necessary to impose an additional fee of seven dollars, as a Gymnasium fee, upon all students at Morningside Heights. Medical students and others will be charged the same fee if they desire

to use the Gymnasium. Each person paying the fee will be entitled to the use of a locker and to a supply of towels and bathing trunks.

Hereafter every student entering the College or the Schools of Applied Science will be required to pass a physical examination, and, during the first two years, to take two hours in the Gymnasium each week. This will render it possible for every student to obtain, under the direction of Dr. Savage, two years of systematic physical training, with the advice necessary to enable him to adapt his work to his particular needs, as shown by his entrance examination. For the accomplishment of the best results the time required is recognized as too short; but since the gymnasium will be open at all times during the day, it will doubtless be used extensively not only by first and second year students beyond the required amount, but by students of all classes who may choose to take advantage of the opportunity which it offers. The establishment of physical training as a requirement is of especial value and importance, as a recognition of such training as an essential part of a college education. As pointed out in a former number of the BULLETIN, the first official action of the Trustees to provide for the physical development of the students was taken in 1867, and the policy then established of encouraging athletics has ever since been consistently pursued, culminating in the erection of the Gymnasium. The introduction into the curriculum of a required course in physical training is the logical sequence, and we may well congratulate ourselves that it has at length become possible.

A letter recently appeared in a daily paper, purporting to be written by "a Columbia student," the burden of which was that "poor students, and even those of moderate means, find Columbia inaccessible, for it is impossible for them to overcome the obstruction of enormous fees." Another correspondent

Students' Living

Expenses

of the paper effectually refuted the misstatements of the so-called student by showing that the fees at Columbia are substantially the same as at Harvard, and that Columbia gives proportionately more for the money than any other university. It is difficult to conceive of the existence at Morningside Heights of a student so misinformed as the one who thus sought to misrepresent his Alma Mater; and such misstatements as his are especially to be regretted as tending to sustain the mistaken belief

that it is a more expensive matter to get an education at Columbia than elsewhere. The supposition that living is more costly here than elsewhere is primarily responsible for this impression, and it is not generally realized that this disadvantage, such as it is, is much more than offset by the generous assistance which the University affords to students and by the possibilities of employment which a great city offers. As to the cost of living, however, a very exaggerated idea prevails. Careful investigation and personal inquiry into the expenses of a large number of students have proved that board and lodging have been and are secured by students at five dollars a week, that an average rate is eight dollars a week, and that fifteen dollars is very liberal. While it is true that the hall bedroom does not meet the student's ideal, it does, nevertheless, supply the necessity; and the experience of innumerable undergraduates has proved that it can be had at less than the usual cost of living in a dormitory. Conceding that a room in a boarding house lacks all the attractiveness of a college room, it must be admitted that it presents advantages to the student who is paying his own way. The statement of students' expenses which is published in the Catalogue, showing that a man can live and pay his tuition fees on \$380 a year, that \$556 is the average, and that \$900 is liberal, is based upon actual experience, and goes far to prove that the city college compares favorably with the country college in the matter of expense.

The Committee on Athletics appointed by the University Council has before it a task commensurate in importance with the large part which athletics are destined to take, and should properly take,

**The Duties of
the Committee
on Athletics**

in the life of the student. For some years past the demand for proper physical training, not only on the part of students but of the educated public as well, has been just as marked as the demand for post-graduate courses and opportunities for original research. This need has been recognized and met elsewhere, with the general result that the physique of college students as a body has shown a marked improvement; and the time has now come when our own students have at their command advantages in most respects equal to those afforded by any university. The opening of the Gymnasium and the establishment of courses in physical training, supply the first essentials; but in order that the Gymnasium may fully serve its purpose, the general and increased interest in athletics,

which has been manifested by the students since the removal to the new site, must be encouraged and properly directed. The Committee on Athletics has already performed a most useful service in formulating rules intended to encourage the practice of athletics within reasonable limits, and to prevent participation in athletic contests by unauthorized persons and by students neglectful of their scholastic duties, the object of the rules being to treat athletics as an aid and not a hindrance to scholastic acquirements.

The readiness with which these rules, though somewhat stringent, have been accepted by the students, is the best possible evidence of their willingness and desire to maintain a high standard, both as regards scholarship and as regards the true spirit of amateur sport. The adoption of these regulations has already had the effect of purifying the athletic atmosphere, and so far as it can be determined by the students, the first step of the Committee has been a distinct success.

There still remains to the Committee, however, the more complicated and difficult undertaking of so adjusting the hours of required attendance at lectures, in the laboratory and drawing-room, that the students shall have a reasonable opportunity for out-of-door exercise without lowering the standard of scholarship. It is obvious that such an adjustment is inevitable, for it is demanded by common sense, and the pressure of public opinion will eventually compel it; and it is essential to the carrying out of the established policy of the University to recognize the physical as well as the intellectual needs of the students.

Excellent as are the rules adopted by the Committee, they are in their nature restrictive, and call for concessions on the part of the students. It is perfectly reasonable, therefore, that the students should expect the Committee to secure for them concessions on the part of the faculties, such as can reasonably be granted without in any way lowering the educational standards of the University. Human nature demands fair play; and if the University crew and track team are held accountable for the good standing of their members in class, they may fairly ask to be relieved from arbitrary and non-essential exactions as to hours of attendance which interfere unnecessarily with their training exercise. Most of all they have the right to expect that participation in athletics, when accompanied by a fair grade of scholarship, shall not operate in any way to their prejudice. The dispensing of equal justice will therefore be one of the prerogatives of the Committee; and in its efforts to establish

athletics upon a sound basis, which shall combine both the regulation and the encouragement of physical exercise, it should receive the support of all who have at heart the best interests of the University.

As before stated, it is not generally realized how much the University offers to its students in the way of fellowships, scholarships, and free tuition, but the following table shows the assistance so rendered during the last academic year. The total, aggregating \$58,698, will probably surprise even those who are familiar with the subject, but it nevertheless represents the sum which was saved to students by the remission of fees, or actually paid to them in the form of fellowships, as nearly as it can be calculated. The amounts remitted vary in the several schools in accordance with the fees, and fellowships (other than traveling fellowships) are estimated at being worth the amount of the fee remitted in addition to the amount paid to the fellow. The amount received by the University for tuition fees during the same period was \$281,801.74, from which it will be seen that the amount expended by the University in aid of students was equal to more than twenty per cent. of the entire amount derived from fees. Out of a total of 1,858 students registered in 1896-1897, no less than 248 received substantial pecuniary assistance from the University.

TABLE SHOWING AID AFFORDED BY THE UNIVERSITY

College

Twenty students having free tuition (\$150).....	\$3,000	
Thirty scholarships, \$150 each.....	4,500	
	<hr/>	\$7,500

School of Law

Eighteen students having free tuition (\$150).....	\$2,700	
Three scholarships, \$150 each.....	450	
	<hr/>	\$3,150

School of Medicine

One scholarship.....	\$900	
Three fellowships, \$500 each.....	1,500	
	<hr/>	\$2,400

School of Applied Science

Twenty-nine students having free tuition (\$200)..<	\$5,800	
Five scholarships, \$200 each.....	1,000	

Two fellowships, \$700 each.....	1,400	
One fellowship.....	1,000	
One fellowship.....	1,300	
	<hr/>	\$10,500

School of Political Science

Twenty-four students having free tuition (\$150)..<	\$3,600	
Seven scholarships, \$150 each.....	1,050	
Nine fellowships, \$650 each.....	5,850	
	<hr/>	\$10,500

School of Philosophy

Fifty-two students having free tuition (\$150).....	\$7,800	
Fifteen scholarships, \$150 each.....	2,250	
Nine fellowships, \$650 each.....	5,850	
Three fellowships, \$500 each.....	1,500	
	<hr/>	\$17,400

School of Pure Science

Four students having free tuition (\$200).....	\$800	
Eight scholarships, \$200 each	1,600	
Six fellowships, \$700 each.....	4,200	
One fellowship.....	648	
	<hr/>	\$7,248
		Total \$58,698

The Committee on Aid for Students will complete this spring its fourth year of existence. It was created with the purpose of endeavoring to find avenues of self-help for those students of the University who needed to assist themselves while engaged in their regular work in the various schools. In addition, it has been able, through the kind offices of Dr. Huntington, the representative of the medical faculty, to secure all students of the University who are introduced by members of the Committee the same gratuitous medical advice from our chiefs of clinics that is customarily extended to medical students alone.

Some anxiety was felt by the Committee last spring as to the effect that the removal to the new site would have upon its work. The old site, being in or near the centre of business activities, seemed to afford a better operating base for obtaining work. Our statistics do show an apparent falling off in our total business. In each of the last two years we have secured about \$4000 worth of work. This year, up to May 1, so far as known to the Committee, work

equivalent to about \$2200 has been obtained. The remainder of the year will increase this somewhat, but the sum total is not likely to reach that of a year ago. The Committee must appeal to all friends of the University to remember its work and aid its efforts.

The war with Spain will have a serious effect on all undergraduate enterprises in Columbia, for many of the students are already enrolled in the National Guard and many more will enlist. There

Undergraduate
Interests

was enough time before its outbreak, however,
to demonstrate that there is more interest in such

enterprises in Columbia to-day than there has been in many years. For Columbia, besides supporting three papers, and producing a play with fifty men in the cast, will have been represented, between December and July, in contests with other colleges in chess, debating, and rowing (with both a University and a Freshman crew), baseball (with two nines), track athletics, bicycling, lacrosse, hockey, fencing and shooting—and, in general, represented by teams which would have been a credit under ordinary circumstances. This is a state of affairs that any Columbia man may well be proud of. Whether it is wise to undertake so much may be questioned, but no one can accuse Columbia of apathy. The experience of this year, furthermore, has brought out two facts very clearly. The first is that the nearness to the College of the boat-house and the Field has been instrumental in creating a much more general interest in athletics among the students. The crowds of men who watch the daily practice are a great encouragement to the men now in training, and undoubtedly many of those who stand and watch this year will be stimulated to try themselves in the future. The second is that, with the keen competition now existing in all collegiate contests, a team needs something more than faithful work on the part of its members, and moral and financial support from the student body. It needs the very best of coaching. The signal success of three of our teams—in bicycling, debating and fencing—has been directly due in each instance to the intelligent coaching that it received. There are many men in the University who believe that, if the baseball nine had been as well handled as those smaller teams, Columbia would to-day have one of the strongest amateur teams in the country. In football, more than in any other game, efficient coaching is an absolute necessity; and as it is probable that Columbia will have a University football team next fall—the articles that have lately appeared in *Spectator* seem to show a strong general

sentiment in its favor—it is none too early for Columbia men, graduate and under-graduate, to think very seriously as to whom they will choose to coach such a team in the event of its formation.

There can be little doubt that in recent years debating has acquired a new and important place in college affairs, not only at Columbia, but at all the larger universities and colleges of the country. A victory in the forum nowadays brings to the contestants distinction no less real or less gratifying than a victory in the field. Courses are devoted to the subject; many men are engaged in teaching it. Columbia's record in this respect is, therefore, very gratifying. Last year a victory was won over the Forum Society of Harvard, and this year two contests with outside institutions have been brought to a successful conclusion. One of these was with the University of Chicago, the other with the Twenty-third Street Branch of the Young Men's Christian Association of New York. The debate with the University of Chicago was held at the Madison Square Concert Hall before a large and thoroughly entertained audience. Although Columbia was compelled to advocate the policy of not increasing the navy, on the night when the report of the *Maine* inquiry was given to the papers, her debaters presented their case with so much skill and force as to win the unanimous verdict of the judges. The other debate, although naturally of less importance, aroused much interest. Next year one or possibly two debates with other universities will be arranged. Several of the Alumni, by acting as judges and by attending the meetings of the societies, have helped materially to stimulate the interest in debating. It is to be hoped that more will be able to do so in the future.

The officers of the several faculties have taken advantage of their new and attractive quarters to return the hospitalities which during the two previous winters they had received from the ladies connected with the University. Four Columbia University teas have been held since the beginning of the year, the first by invitation of the President, the Librarian, and the other officers having rooms in the Library, on the eighth of January. This was followed a fortnight later by a tea in Schermerhorn Hall, and on the fifth of February by a third

in Havemeyer Hall—this day, by a happy chance, proving to be the birthday of Mr. Frederick Christian Havemeyer, as a memorial of whom the building had been given by his daughters, sons and nephews. Then, on the twenty-eighth, the newly annexed Teachers College gave a reception to Mr. and Mrs. Low, and on the twelfth of March Barnard College received its friends, by invitation of the Dean. Finally, when the spring was fairly begun, and the natural advantages of the site were especially conspicuous, the officers of the Engineering and Physics Buildings united in a joint invitation for the sixteenth of April. Something like forty thousand invitations, altogether, must have been sent out, and twelve or fifteen thousand persons must have visited the University—to most of them it would otherwise have been little more than a name. Not only the imposing beauty of the Library and the completeness of its appointments, but the size and convenience of the other buildings, the amplitude of the collections and of the apparatus of instruction, and the unequalled splendor of the site, have made a profound impression upon all this company.

In the invaluable sketch of the German universities which Professor Perry of Columbia translated into English a few years ago, Professor Paulsen of Berlin points out how completely the univer-

<p>An Appointment Committee</p>	<p>sity faculties of philosophy have become professional schools for the preparation of teachers for the higher schools. This is as true in the United States as in Germany. The degrees <i>Magister Artium</i> and <i>Doctor Philosophiæ</i> are chiefly sought now, as they were at the time of their origin, by students who look forward to teaching as a career. So it has come about that one of the surest and safest tests of a university's efficiency is the number and character of the teaching positions held by the bearers of its higher degrees. Judged by this standard Columbia University has much cause for congratulation. With its strongly equipped Department of Education, and with the unequalled resources of its Teachers College, Columbia is able to offer intending teachers an opportunity for training and for professional equipment which, it is no exaggeration to say, cannot be had elsewhere. Each year has seen more Columbia men called to important positions in colleges, normal schools, and secondary schools. Lists of these appointments, when published from time to time in the annual reports of the President, show how representative, both educationally and geographically, are the posts held by our graduates.</p>
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The time has come when it seems wise to organize and systematize this side of the University's activity; and the University Council has recently instituted an appointment committee, to consist of nine professors, whose duty it shall be to recommend competent graduates of the College and University for teaching positions and to assist graduates in obtaining such positions. It is the purpose of this important committee to keep accurate records of those graduates who are now teaching or who desire to teach, and to use all due diligence in securing and recording information concerning positions for which such graduates would be suitable candidates. This service will be rendered to the graduates without cost, and in the interest of the extension of the influence and standards of Columbia.

Bradney B. Griffin, who died of pneumonia on March 26th, at the age of twenty-six years, was connected with Columbia as a graduate student for nearly four years, during one of which he

Bradney Beverley
Griffin held a University Fellowship in Zoölogy.

Through his untimely death zoölogy has lost an investigator of great promise, for, although his best work was still in press at the time of his death, he had already made a permanent impression on his subject through several brief papers published in the *Transactions of the New York Academy of Sciences*. He was the son of Dr. Bradney Griffin, of New York, and received his earlier education at the College of the City of New York, where he graduated in 1894. Mr. Griffin then became a graduate student in zoölogy at Columbia University, and took part in the zoölogical expeditions to the northwest coast sent out in the summers of 1896 and 1897. He was the author, wholly or part, of several papers relating to the fauna of that region, one of which, dealing with the nemerteans of Puget Sound and describing a number of species new to science, had been sent to press immediately before his last illness. At that time his plans were matured for a third trip to the west coast, where he hoped to procure the material necessary to complete this work; and he had projected a larger monograph along the same lines. His principal work lay, however, in the field of cellular biology; and a brief but important paper by him on the fertilization of the egg in *Thalassema*, published in 1896, had attracted considerable attention, both in this country and abroad. This paper formed the nucleus of his dissertation for the degree of Doctor of Philosophy, which is now in press in the form of an extended paper. This work,

dealing with some of the most vexed and difficult problems of cellular biology, brings forward new and important evidence regarding the fertilization of the egg, the history of the centrosome, the phenomena of chromatin-reduction, and many related questions, and was the result of prolonged and laborious research. Mr. Griffin was a man of singularly pure character, and his single-hearted devotion to his life-work will not be forgotten by those who have felt the stimulus of his example. He had no thought of material reward or of personal advancement, giving his entire energy to scientific work for its own sake, and in so unassuming a way that the full merit of his work was known to only a few. The loss of such a man must be sincerely mourned.

UNIVERSITY NOTES

THE LIBRARY

The additions to the Library for the period from July 1, 1897, to April 30, 1898, were 12,377 volumes, of which 5,840 have been added since January 1, and 3,712 since March 1.

Many valuable sets have been added recently, among which may be mentioned: *Journal of the Academy of Natural Science in Philadelphia*, 1817 to date; *Bulletin* and other publications of the *Société philomathique de Paris*, 1791 to date; *Revue de linguistique*, 28 volumes; *Revue socialiste*, 25 volumes; *Nova acta* of the Royal Society of Science at Upsala, 20 volumes; *Naturhistoriske Forening meddelser*, Copenhagen, 1855 to date; *Atti della società italiana di scienze naturali*, 34 volumes; *Atti e memorie dell' istituto veneto*, 162 volumes; *Archivio storico lombardo*, 16 volumes; *Archives des sciences physiques et naturelles*, 126 volumes; *Zeitschrift für die gesammten Naturwissenschaften*, 67 volumes.

An interesting gift recently made to the Library was that of the *Catalogue of books relating to North and South America in the Library of the late John Carter Brown of Providence*, issued in two volumes in 1875-1882. This magnificent catalogue was presented by Mr. John Nicholas Brown, the present owner of the Carter Brown Library.

A large number of orders have been placed within the past two months and are now being filled, especially for books on the French

Revolution and on the Reformation, and many books are coming in on these and other subjects.

The *Bulletin of the New York Public Library* for January contains lists of periodicals in that library and in Columbia on botany and horticulture; the February number has similar lists for zoölogy and meteorology, and the March number for general natural history, geography, and anthropology.

FACULTY OF APPLIED SCIENCE

The Department of Civil Engineering.—The removal of the University to the new site has afforded opportunity for the development of the Department of Civil Engineering in two or three directions. In the second year general work in electrical engineering, extending throughout the entire year, has been incorporated in the course. This addition, with the electrical engineering work of the third year, gives the course a well balanced proportion in the electrical work which it has not hitherto enjoyed. In the fourth year an excellent course in the metallurgy of iron and steel has been established, which gives the Department abundant strength in that direction, and affords educational training of a kind most essential to the civil engineer at the present time. The machine shops of the Teachers College have been opened to the students of the various engineering departments, and those in civil engineering are required to take a limited but sufficient amount of shop practice. This is intended for the attainment of, and is essential to, the highest efficiency in the work of structural and machine design done by the civil engineering students.

Mr. A. E. Foyé, C.E., having resigned the instructorship in civil engineering, the adjunct professorship has been filled by the appointment of Mr. Earl Brink Lovell, C.E., who will begin his duties on July 1st. Mr. Lovell graduated from the College of Civil Engineering of Cornell University in 1891. After graduation he was engaged in railroad construction, operation, and maintenance, for two years, on the Michigan Central Railroad. He was instructor in civil engineering at Lafayette College for a short period, and since that time he has been instructor in civil engineering and assistant in the physical laboratory at Cornell University. It is the intention of the Department materially to extend and develop instruction in the field of railroad engineering.

Department of Metallurgy.—The Trustees have authorized the installation of a metallurgical laboratory on an illustrative scale, and

their authorization will be carried into effect during the coming year. It is believed that the introduction of this laboratory will add very greatly to the value of the course.

The Trustees have also authorized the establishment of a summer school in metallurgy. It will be held in Pennsylvania, probably at Pittsburgh, beginning on September 19. The reason for having it at this time, instead of during July, as heretofore, is that the exposure to the very high temperature about the metallurgical works (which in July is at times so severe as to compel even the workmen accustomed to it to abandon their work) is likely to be prostrating to those not accustomed to it. In the latter part of September the chance of having oppressive weather is, of course, much smaller.

Nine new graduate courses in metallurgy are now offered. They are as follows: The formation-points, melting-points and specific heat of slags, their density and viscosity when molten, and the phenomena of crusting; the influence of strain upon the properties of metals; the chemistry of roasting processes, including the expulsion of arsenic and antimony; the chemistry of the iron blast furnace; the chemistry of basic dephosphorizing processes; search for new and useful alloys; firebrick and other refractory materials, their resistance to heat and to corrosion; electrolytic refining and depositing processes; wet processes for extracting gold, silver, and copper.

FACULTY OF MEDICINE

(COLLEGE OF PHYSICIANS AND SURGEONS)

The organization of a Department of Physiological Chemistry in the College of Physicians and Surgeons, which has been a long cherished purpose of the Faculty, is now well in hand, and lectures and practical work for the second-year men will begin in the autumn under most promising auspices.

Professor Russell H. Chittenden of the Sheffield Science School, who has won for Yale so high a standing in practical teaching and in research work in physiological chemistry, and for himself a commanding position as an instructor and investigator, is, without relinquishing his duties at New Haven, to direct the organization and conduct of the new department here and to give weekly lectures. William J. Gies, Ph.D. has been appointed Instructor in Physiological Chemistry; Alfred N. Richards, A.B., and Henry E. McDermott, A.B., Assistants.

The Department of Pathology has recently received a valuable collection of books relating to the anatomy and physiology of the nervous system, apparatus for the study of disease, and pathological specimens of great importance, as a bequest of the late Dr. E. C. Seguin, formerly a professor in the College of Physicians and Surgeons. Many of them are rare old works, with fine plates, and are not readily accessible in this country. By the terms of the bequest the collection is to be catalogued, and kept together in the pathological laboratory. Dr. Seguin was a man of such scholarly tastes, enjoyed so wide an acquaintance among scientific men abroad, and was such an indefatigable worker, that this bequest in which he so generously remembered the College is of special significance and value.

The following will be of interest to the Alumni in connection with the resignation of Dr. McLane from the position of Professor of Obstetrics.

At a meeting of the Faculty of the College of Physicians and Surgeons, held March 21, 1898, the following letter was presented from Dr. McLane.

TO THE FACULTY OF THE COLLEGE OF PHYSICIANS AND SURGEONS.

GENTLEMEN: I herewith present to your body, for transmission to the Trustees of Columbia University, my resignation as Professor of Obstetrics.

It has been known to many of you for some time that my retirement has been under consideration, and has been deferred until I could see the completion of the Sloane Maternity Hospital, an institution which I have always deemed of vital importance to the future growth and prosperity of the College.

The building and its equipment have now been completed in every detail, and the organization of the Hospital placed upon a satisfactory working basis.

I feel, therefore, that my task has been fulfilled, and on this, the thirtieth anniversary of my connection with the College, I surrender the chair received at your hands, and tender you my resignation as Professor of Obstetrics.

It is a source of intense gratification to me, on retiring from active service, that I have lived to see the complete fulfillment of the project which I undertook in the year 1884, and to look upon the thirty lots of land then purchased entirely covered by our College buildings, constituting a plant unequaled in this country;

and, more than all, that the institution to whose interests I have devoted so much of my life, and for whose welfare I have persistently labored for so many years, has an assured future of prosperity under the aegis of Columbia.

Many have been the changes in our Faculty since I joined it in 1868. Not one remains of its members in active service, and but two are living. The confidence and affection which you and your predecessors have always given me have been most gratifying, and have enabled me to accomplish much that without such support would have been impossible.

In severing a tie far closer than that of ordinary friendship, and hardly second to that of family, I can only say that I have the deepest regret and sorrow.

In the confident expectation that those who succeed me will carry to a much higher perfection the work of the department in which I have labored, I bid you an affectionate and cordial farewell.

JAMES W. McLANE.

The following preamble and resolution were by vote adopted by the Faculty :

WHEREAS, in the opinion of the medical faculty it is of great importance that Professor McLane should continue to act as its Dean, even though he retire from active teaching in the College, it is therefore

Resolved, That the Trustees be respectfully requested to create the office of Emeritus Professor of Obstetrics, without salary and with a seat in this Faculty; and that they be further respectfully recommended to accept the resignation of Professor McLane as Professor of Obstetrics and to transfer him to the office of Emeritus Professor of Obstetrics under the aforesaid conditions, and without in any way affecting his position as Dean of the Medical Faculty.

The following letter to Dr. McLane was ordered to be engrossed and signed by the Faculty :

This Faculty has learned with deep regret of your intention to retire from active service in the chair that you have filled for so many years with such conspicuous ability.

While we fully sympathize with you in your desire to lighten the burden that you have carried so long, we cannot allow your withdrawal from activity among us as a teacher without saying to you that it is our hope, as it is our desire, that you may still remain a

member of our body, and, under the President of the University, our executive head.

A successor may teach obstetrics, but no successor will replace you in our counsels.

That deep regard for the welfare of this College which we know you share with us leads us to hope for your continued help in the solution of the problems of the future.

This we feel and say, well knowing that except for your aid the problems of the past would still remain unsolved. Without your help we should still be where we were twenty-five years ago, with no adequate means of teaching and investigating, with no assured future as part of a great University, and without our present influence in the scientific world.

For your unprecedented services to this College we wish to renew and to record afresh our heartiest thanks.

The following letter was addressed to the Trustees, April 4, 1898, by President Low:

To the Trustees: I regret to be obliged to announce to the Trustees that Professor James W. McLane, M.D., has tendered his resignation as Professor of Obstetrics in the College of Physicians and Surgeons, to take effect September 30, 1898. It is the earnest desire of the Medical Faculty, and Dr. McLane is willing, that, in retiring, after an uninterrupted service of thirty years, from the active duties of his chair as Professor of Obstetrics, Dr. McLane should continue to serve the Faculty as its Dean, and thus to represent it uninterruptedly as a trustee of the Sloane Maternity Hospital, the Vanderbilt Clinic, and the Roosevelt Hospital. The President is heartily in sympathy with this desire. Resolutions are appended to this letter, intended, if approved by the Trustees, to give effect to this wish.

Dr. McLane's services to the College of Physicians and Surgeons and to the cause of medical education, prior to the merger of the College in Columbia University in 1891, and in bringing about that merger, cannot be exaggerated; and his loyalty since that time to the University—not only to its Medical School, but to the University as a whole—is worthy of the highest praise. As a teacher, he has few, if any, equals in the Faculty of the College of Physicians and Surgeons, and it is a source of regret that his services in that connection are about to terminate. On the other hand, it is a source of the greatest satisfaction that the College may hope to re-

tain him as its Dean and its representative in the various hospitals with which it is associated. Had Dr. McLane been a man of small mould, the union of the College of Physicians and Surgeons and Columbia University, humanly speaking, never would have been brought about. While many influences contributed to this result, it still remains true that no one of them, nor all of them combined, would have been successful except for the attitude taken by Dr. McLane. This incorporation of the College of Physicians and Surgeons in the University, therefore, will be his enduring monument. It is gratifying to note that the Medical Faculty, in the letter to Dr. McLane, adopted by them on the receipt of his letter announcing his wish to retire from the chair of obstetrics, expressly recognized it as a part of the great service which he has rendered to the College of Physicians and Surgeons, that he has secured for it an assured future as a part of this great University, and that, in doing so, he has already realized for it a great advance in its influence in the scientific world.

Respectfully,

SETH LOW,
President

FACULTY OF PHILOSOPHY

On April 1, under the rules, applications closed in the Faculty of Philosophy for examinations for the higher degrees. In that faculty alone there are 14 applications to be examined for the degree of doctor of philosophy, and 33 applications to be examined for the degree of master of arts. The applications for the degree of doctor of philosophy are distributed among the several departments as follows: Philosophy, 3; Psychology, 2; English, 3; Latin, 2; Greek, 1; Romance Languages, 1; Semitic Languages, 2.

The thirty-three applications to be examined for the degree of master of arts are distributed as follows: Philosophy, 13; Education, 6; Literature, 6; English, 2; German, 2; Indo-Iranian Languages, 1; Greek, 1; Psychology, 1; Oriental Languages, 1.

A larger number of candidates for university degrees than ever before have presented themselves for examination in the division of philosophy, psychology, and education. The theses of two candidates for the doctorate, Messrs. Lay and Thorndike, are to appear as supplements to the *Psychological Review*. The dissertations of Messrs. Cole and Jones are to appear as Nos. 3 and 4, respectively, of the second volume of the *Columbia University Contributions*

to *Philosophy, Psychology, and Education*. Mr. Cole's dissertation is entitled *The Basis of Early Christian Theism*; that by Mr. Jones is on *Early American Philosophers*.

Dr. Norman Wilde, for four years assistant in philosophy, has accepted a call to the University of Minnesota, as instructor in philosophy, and will enter upon his new duties in September next.

Dr. John A. MacVannel, for two years assistant in philosophy, will hereafter devote his entire time to his duties as instructor in psychology and education in Pratt Institute, Brooklyn.

At the meeting of the American Oriental Society at the Hartford Theological Seminary, April 14-16, a paper was presented by Professor Gottheil on Syriac folkmedecin.

W. Hays Radan, a candidate for the degree of Ph. D. in the department of Semitic languages, has published a paper on *Some Problems in Biblical Chronology*. It is printed in the *Seminarium*, a volume published by the students of the General Theological Seminary.

At the recent meeting of the American Oriental Society, Mr. A. Yohannan presented a paper on *Some Syriac Manuscripts*. The paper will be printed in the forthcoming *Journal* of the society.

The Indo-Iranian Department of Columbia was represented at the annual meeting of the American Oriental Society, held at Hartford, Conn., April 14, 15, 16, by Professor Jackson and two students in the department. The fellow in Indo-Iranian languages, L. H. Gray, presented a paper on "The Metres of Bhartrihari;" and A. F. J. Remy, fellow in comparative philology, brought forward a note on "Sanskrit *jana*, Avestan *zana*."

Under the auspices of the Department of the Romance Languages and Literatures, Mr. René Doumic, professor of rhetoric in the Collège Stanislas, of Paris, and literary critic of the *Revue des Deux Mondes*, delivered three lectures, in French, on March 17 and 19 and April 21. His subjects were "La Société française et la littérature d'aujourd'hui," "Le Théâtre d'Alfred de Musset" and "Le Rôle social de l'écrivain." In addition to the above Professor Doumic, on Friday, March 18, spoke informally to the members of the University of the advantages offered by Paris to the American student.

In April and May Professor Cohn delivered a public course of four lectures on Voltaire before University audiences.

Dr. C. H. Page has applied for one year's leave of absence, which he intends to spend partly engaged in literary work in this

country, partly abroad. He expects, however, to give at the University a course of four public lectures on Victor Hugo. During his absence his work will be carried on by two assistants and a lecturer. The assistants will be Mr. Daniel Jordan and Mr. John Driscoll Fitz-Gerald.

Mr. Jordan is a native of France. He received the degree of B.S. at Besançon (France) in 1888, and of Bachelor of Pedagogy at Albany, N. Y., in 1893, and was University Scholar in Columbia University in 1895-96. Mr. Fitz-Gerald is a Columbia A.B., 1895, and was awarded in the same year the Alumni prize by the vote of the graduating class. In 1895-96 he was University Scholar in Columbia University. He spent the following year studying the Romance languages and literatures in the University of Paris, and was, in July, 1897, elected *Élève titulaire de l'École des Hautes Études*. During 1897-98 he has held a university fellowship.

The lecturer, Mr. Bargy, is a *Bachelier ès Lettres* of the University of Paris (1892), and a *Licencié ès Lettres* (1894) of the same University. In 1892 he was admitted to the *École Normale Supérieure*, which he actually entered only a year later, after complying with the obligation of serving one year in the French army. On leaving the school he filled temporary positions in the *Lycées* of Nîmes and Dijon, and in 1896 was called to the City of Mexico, there to organize a *lycée* upon the French plan.

Regular instruction in Portuguese and Rumanian will be offered for the first time in 1898-99, thanks to the organization of two new courses by Professor Cohn and Professor Todd, respectively.

FACULTY OF POLITICAL SCIENCE

Mr. E. L. Bogart, who was a student in the School of Political Science during the year 1897-98, has recently received an appointment to the chair of sociology at Smith College, Northampton.

L. W. Hatch, a University Fellow in economics in 1894-95, is now in charge of expert work of tabulation at the Bureau of Labor Statistics, Albany.

A. F. Weber, a University Fellow of 1896-97, is now assistant registrar at Cornell University.

The two works of Professor Seligman, on *Progressive Taxation in Theory and Practice* and on *the Shifting and Incidence of Taxation*, are about to appear in a Japanese translation.

Three new numbers of the *Series in History, Economics and*

Public Law will be published this spring. They will be: (1) *Public Administration in Massachusetts: the Relation of Central to Local Activity*, by Robert H. Whitten; (2) *German Wage Theories: a History of their Development*, by James W. Crook; (3) *Centralization of Administration in the State of New York*, by John Archibald Fairlie. These numbers will complete the ninth volume of the *Series*. New editions of several of the earlier volumes will also be issued.

FACULTY OF PURE SCIENCE

At the request of Professor Rees, Lieutenant Rodler, of the Austrian frigate *Donau*, was granted, by President Low, permission to set up the Sterneck pendulum apparatus in the basement of Physics building. The Physics Department furnished the room for mounting the apparatus, and the Astronomical Department supplied (from Dr. Davis's observations) the time. The *Donau* will visit various places on a cruise about the world and many determinations of "gravity" will be made. The U. S. Coast and Geodetic Survey Office, on learning that the Austrians had made the determinations of gravity here, applied to the Observatory to be allowed to make observations in the same place. This permission was granted.

Department of Botany.—In addition to Mr. Rydberg, whose thesis for the doctorate is in course of printing, there are eight graduates registered for major courses in botany. Of these Dr. S. E. Jelliffe, whose work was carried on with Dr. Britton, has completed a survey of the flora of Long Island; Mr. M. A. Howe, fellow in botany, will also take his examination on his thesis this month; Mr. E. O. Wooton has nearly completed his thesis on the flora of New Mexico, and will remain at the University during the summer in order to continue the study of certain families; Professor E. S. Burgess has for his thesis the genus *Aster* in North America; Mr. Tracy E. Hazen, fellow elect, is at work on the Chlorophyceæ, particularly the Confervales; Professor Lloyd is engaged in morphological work; Miss Louise Dunn is engaged in physiological work; and Mr. G. C. Mouldsdales, after a year of preliminary work, will soon commence the special study of a single group of the higher plants. Besides these graduate students, several students are pursuing minors in botany, and the undergraduate work has been greatly increased over last year.

Many additions have been made to the collections, both in the

Herbarium and in the morphological series. Professor Lloyd is also preparing a valuable embryological series for museum illustration. Perhaps the most notable additions to the Herbarium consist in placing in order for study the entire series of algal collections that have been accumulating for a long time, together with others recently acquired. Some of these include series from Greville's collection, species collected on the Mexican boundary survey, together with a large series collected by Schott on the Atrato expedition; the collection belonging to the professor of botany has also been deposited in serial order with that of the department. In all some 6000 sheets have been mounted and arranged in the Engler-Prantl sequence, and joined with the extensive collection already in the department, the present collection forms a first-rate working nucleus. Additions are, however, needed, particularly from the North Atlantic and Gulf coast species and from the fresh waters of the United States. The series of European types is especially large.

Professor Underwood will spend the summer mainly on the Continent, visiting various laboratories and studying types at Berlin and Kew.

Professor Lloyd of the Teachers College, who is registered for major work in botany, will spend as much of the summer as possible in the laboratory of Professor Goebel, in Munich. Professor Lloyd has recently published two important morphological papers on the Coniferæ.

Dr. C. C. Curtis will spend the summer largely in the physiological laboratory of Professor Pfeffer, in Leipzig.

Dr. J. K. Small will remain in the University during the summer. He has practically completed the first draft of his new *Flora of the Southern States*, which deserves more than a passing notice. Chapman's *Flora of the Southern States*, of which three editions have appeared (in 1860, 1884, and 1897), is at best a very unsatisfactory work, as is painfully apparent to those who have made any extended use of it in the field. This arises in part from the undue grouping of divergent species under generalized descriptions, and in part from the fact that, like most of the older manuals of botany, the descriptions were not made from recent examinations of the plants, but copied or condensed from early and often defective descriptions. Dr. Small's work is extended beyond the range of Chapman's, so as to include the region west of the Mississippi to the 100th meridian, thus including Louisiana, Arkansas, Oklahoma, and Texas as far as the middle of the state. In addition to exten-

sive personal exploration, he has been aided by several isolated collectors, who have been engaged in field work since 1891. These collections, together with the original Chapman collection, are a part of our herbarium, and have furnished the largest amount of material anywhere available for such a work. Dr. Small has been writing on the flora since 1894, and almost continuously since 1896. The descriptions have all been written from a direct examination of the plants, and the magnitude of the work can be seen when it is known that the new *Flora* will contain nearly 6000 species, more than 2000 additional to the *Flora* of Chapman's. This includes a large number of new species, some of which are still in manuscript.

Mr. E. O. Wooton, who has been a graduate student for two years, has been elected Professor of Botany in the New Mexico Agricultural College, and Botanist of the Experiment Station, a position that he held for four years before he commenced his work at Columbia. This appointment will enable him to continue his study of the still little known flora of New Mexico.

Department of Zoölogy.—The field-work of the Department of Zoölogy during the coming summer promises to be of more than usual interest. The most important of this work is expected to be that of the expedition to Africa in quest of the developmental stages of the Crossopterygian fishes, which has been rendered possible through the generosity of Charles H. Senff, Esq., to whom the Department is already indebted for the greater part of its library. This work has been undertaken by Nathan R. Harrington, the present Fellow in Zoölogy, and by Dr. Reid Hunt, Tutor in Physiology. The party sailed on April 23 for England, whence, after consultation with the zoölogists of the British Museum, they will probably proceed to the Guinea Coast, and thence some sixty miles inland to Old Calabar, where the fish are believed to spawn. The research which will thus be attempted is regarded as of the highest importance by all zoölogists. The fishes in question, *Calamoichthys* and *Polypterus*, are now looked upon as representing, more nearly than any other recent fish-like animals, the ancestors of the terrestrial vertebrates; and a study of their development, which is still entirely unknown, is confidently expected to throw light upon many long disputed problems relating to the origin of the higher animals. Among those problems may be mentioned the origin of the paired limbs, the origin and the significance of the ribs, the homology of lungs and swim-bladder, and many other questions relating to the primitive conditions of the viscera, skele-

ton, brain, and sense-organs. These remarkable fishes are as interesting to the anatomist and palæontologist as to the embryologist. They show affinities to the more primitive and ancient sharks, and are probably nearly related to the ancestors of the ganoids (gar-pike, sturgeon, etc.) and the bony fishes. They are, in fact, the solitary survivors of an ancient race, dominant in the time of the Old Red Sandstone, and now restricted to the fresh waters of Africa. Professor Dean attempted to secure the early stages of *Polypterus* in 1892 in the Nile region, but was unsuccessful, owing to the political disturbances, which rendered it impossible at that time to ascend beyond the second cataract. Mr. Senff's enlightened liberality now makes it possible to make another and more systematic attempt, and its results will be expected with deep interest.

The plans for a third expedition to the West Coast, which was to have gone to Puget Sound this summer, have been frustrated through the death of Mr. Griffin (see page 248), in whom the Department has lost an able and enthusiastic worker. Other field-work will be carried on at the Woods Holl Biological Laboratory by Dr. Strong, Mr. Crampton, and a number of graduate students, on the coast of Maine by Dr. Calkins, and on the coast of Nova Scotia by a party of undergraduates. Professor Dean, accompanied by Dr. Graf, has recently visited the lake region of eastern Wisconsin to make further observations on the embryology of the ganoid *Amia*, and upon his return left Dr. Graf in charge of the work. Professors Osborn and Wilson intend to pass the summer in visiting various European laboratories, and will attend the International Congress of Zoölogists, to be held at the University of Cambridge in August.

Among the researches carried on during the year may be mentioned the following: Professor Osborn, on the fossil mammalia of the western tertiary beds; Professor Wilson, on the embryology of annelids and platodes and on the structure of protoplasm; Professor Dean and Mr. Sumner, on the embryology of fishes; Dr. Strong, on the structure of the cranial nerves; Dr. Calkins, on the morphology and cytology of the Protozoa and, in conjunction with Mr. Keppel, on the hydroids of the northwest coast; Mr. Crampton, on the grafting of butterflies and on the history of the ascidian egg; Mr. Harrington, on the effect of light on protoplasm; Dr. Mathews, on the chemistry of staining reactions; Messrs. McGregor and Paulmier, on the phenomena of spermatogenesis in vertebrates and insects. The *Journal of Comparative Neurology*, of which Dr. Strong is one of the active editors, has recently been much enlarged; and,

through the establishment of a board of collaborators, including among them so eminent a neurologist as Professor Edinger, of Frankfort, Germany, is now enabled to offer greatly improved facilities for the publication of researches and the criticism of current literature in this field.

TEACHERS COLLEGE

Judging from the comments in the educational periodicals, the significance of the incorporation in Columbia is widely appreciated, and President Low's high estimate of the importance of this step toward the elevation of the teaching profession is generally accepted.

The new catalogue of Teachers College reflects strikingly the change in organization and the improvement in the general arrangement of work. There are offered four-year courses for intending teachers in secondary, elementary, and kindergarten teaching, each leading to an appropriate college diploma; special courses of two years in art, domestic art, domestic science, and manual training, leading to the corresponding departmental diploma; and graduate courses, leading to the higher college diploma. The last mentioned are open to persons of superior ability and culture, whether holders of a bachelor's degree or not, provided they can give reasonable evidence of ability to undertake successfully original research and investigation. The A.M. and Ph.D. degrees are open also to graduate students electing education as a major or minor subject and registering in Columbia in the proper faculty.

It is possible for a student to secure the A.B. degree and the college diploma at the same commencement by pursuing the regular A.B. course in Columbia (or Barnard), together with the professional courses prescribed by the faculty of Teachers College. In general, subject-matter will be given in Columbia (or Barnard), method in Teachers College.

About one hundred and forty courses are offered under the following heads: education, anthropology, art, biology, domestic art, domestic science, economics and social science, English, geography and geology, Greek, history, kindergarten, Latin, manual training, mathematics, music and voice training, philosophy and ethics, psychology, physical science, and physical training. Twenty-eight of the courses are purely professional.

Five fellowships of the value of \$500 each, in addition to free

tuition, and ten graduate scholarships of the value of \$150 each, will be awarded this year for the first time. The fellows and scholars thus appointed must elect their major subject in education. The awards will be made in substantially the same manner as other university fellowships. Besides these there are four undergraduate scholarships of the value of \$75 each, awarded at the discretion of the Faculty; the Earle Scholarship of \$150, open to undergraduate men only; the Charlotte Louisa Williams Scholarship of \$150, open to undergraduate women only; and the Low Scholarship of \$400 per annum, open to an undergraduate student in the Kindergarten Department.

Since the March BULLETIN went to press there have been added to the teaching force five instructors. Louis Rouillion, B.S., Cornell, '91, author of *Course in Mechanical Drawing*, comes from the Pratt Institute to be instructor in mechanical drawing. Herbert Vaughan Abbott, A.B., Amherst, '95, son of Dr. Lyman Abbott, and at one time literary critic on the *Commercial Advertiser*, and assistant and instructor in English in Harvard University, 1894-1898, comes to the Horace Mann School as instructor in English. Mary Davis Chambers comes from the St. Louis public schools, where she has been assistant supervisor of drawing, to be instructor in drawing in the Horace Mann School and in Teachers College. Susan Whitcomb Hoagland, A.B., Vassar, '95, comes from Berkeley Institute, to be instructor in history in the Horace Mann School. Mary Edwards Calhoun, Teachers College, '98, is to conduct the lower seventh grade in the Horace Mann School.

It is specially gratifying to be able to record the end of the building debt. Miss Grace H. Dodge, Treasurer of the Board of Trustees, announces that since last December three gifts of \$25,000 each, and one of \$40,000, have been received, thus cancelling the aggregate of \$115,000. The donors' names are withheld.

Professors Dodge and Lloyd have been giving a series of voluntary excursions for botanical, geographical, and geological field work. Students in these departments, instructors, officers, and invited guests are eligible for these trips. Their purpose is to show where material is to be found, how it came there, how it is to be treated, and what are its relations to man. The idea is to give training in the field and not merely in the laboratory. To this end typical regions are visited, such as Rutherford, N. J., for swamp vegetation, and Staten Island moraine for the commercial-geographical aspect of New York harbor. Bronx Park, the Palisades, Yonkers,

Pleasant Plains, the valley of the Passaic, Mauch Chunk, and Fish-kill are also on the list of places visited, each because of some specific natural feature.

The Department of Biology has been enriched by the acquisition of some forty-five original drawings by William Hamilton Gibson, which formed a part of the illustrations to *Eye Spy* and *My Studio Neighbors*, and a fine panoramic photograph of Crater Lake, Oregon, by Professor Lloyd.

The equipment of the geographical laboratory has been increased by the series of geographical models designed and executed by Professor William M. Davis and Mr. G. C. Curtis, at the geographical laboratory of Harvard University. The models represent three stages in the history of a continent and are extremely valuable for class use.

Mrs. M. S. Woolman, professor of domestic art, is greatly encouraged over the outlook for manual training in the South. In company with Miss Parsons and Miss Patterson she has been conducting, in Richmond, Virginia, an exhibition of the now famous foreign needlework of the New York Association of Sewing Schools. The comments of the *Richmond Dispatch* and *Times* indicate the very great interest aroused in the whole subject of manual training from its educational side. Forty visitors came the first day; twenty-three hundred before the exhibit was closed, two days later. Social functions were at their height, owing to the presence in the city of Mrs. Jefferson Davis and General Fitzhugh Lee. Nevertheless, the Northern teachers were hospitably received and given an opportunity to present their cause before the social clubs of the city. In tangible evidence of the interest aroused, Miss Grace Arents, of Richmond, pledged sufficient money to support a teacher who, it was urgently requested, might be sent to them to act as counsellor in a definite movement to establish manual training in the schools of Virginia.

UNDERGRADUATE NOTES

[The outbreak of the war and President Low's offer to release students in good standing from their final examinations in case of their enlistment will undoubtedly have a marked effect upon all branches of undergraduate life, but it is too soon to determine what the effect will be in each branch. The following notes must therefore be understood as a record of what had been done before the outbreak, and an estimate of what the probable outcome would have been under normal conditions.]

The first and second University crews and the Freshman crew are now in quarters on the third floor of Schermerhorn Hall. The men have been on the Hudson since April, and although the unusually rough water has been a serious handicap, the work is quite satisfactory for this time of year. At present the crews are made up as follows: First University—Betts (*bow*), Boyesen, McClintock, MacKay, Longacre (*captain*), Shattuck, Erdal, Tilt, and Bogue (*coxswain*). Second University—Wigham (*bow*), Jones, Elliot, Birkhead, Brown, Thomas, Machen, and Rochester (*coxswain*). Freshman Crew—Mitchell (*bow*), Falconer, Stevenson, Henderson, Nash, Meyer, Le Prince, Lawrence, and Fuller (*coxswain*).

The baseball team has been greatly helped by the interest of the students, both in the regular games and in the practice. The men are now showing the effects of the hard work done in the early spring, and are playing an excellent game in the field. Unfortunately the batting, except in the case of three or four of the men, is not so good as the fielding, and the team play is far from what it should be. On the whole, however, the team is one that is most creditable to the University. The following games have been played with other colleges: April 2, Princeton 8, Columbia 3; April 13, New York University 10, Columbia 13; April 22, Harvard 7, Columbia 2; April 23, Princeton 0, Columbia 9. The second game with Princeton was given to Columbia by the umpire at the end of the eighth inning.

The track team is not in good condition. Of the large number of candidates at the beginning of the year, three-fourths soon dropped out, and few of those left are working with any regularity. The captain of the team, H. G. Hershfield, left college toward the end of April, and A. B. De Young was elected to take his place. It is to be hoped that the University will support him in his efforts to put the team on a better footing. The bicycle team is doing very well, and, barring accidents, should undoubtedly repeat its victories of 1896 and 1897 in the intercollegiate games. Captain Williams, and Dawson, Powell, Bird, Schwartz, Morrill, Waterman, and Hall are doing the best work.

Columbia won the intercollegiate fencing tournament on April 2, scoring twelve bouts to Harvard's ten and Cornell's five. The victory was largely due to the fine work of J. F. B. Mitchell, '98, who won all of his six bouts. The other members of the Columbia team were Kirby and Ware. A lacrosse team has been organized

under the captaincy of A. R. E. Starr. It has been carefully coached by Columbia graduates who are members of the Crescent Athletic Club's team; and, although many of the men are inexperienced, the team has done very well in its practice games, and should make a good showing against Harvard and Cornell in the Triangular Lacrosse League. The Tennis Club has secured courts on grounds belonging to Luke's Hospital, and it is hoped that the convenience of these grounds will tend to renew the interest in the game at Columbia. Although the Golf Club and the Gun Club are both members of their respective intercollegiate associations, neither has as yet done very much to develop a creditable team; and, unless they begin very soon, Columbia will not be represented in these branches of sport, or, what would be worse, she will be misrepresented by third-class teams.

The debate with the University of Chicago, held on March 25, resulted in a victory for Columbia. The question was: *Resolved*, That the present policy of increasing the United States Navy is wise, and should be continued. Columbia, which had the negative, was represented by B. M. L. Ernst, '99; C. F. Wheaton, Law, '99, and J. M. Proskauer, Law, '99. The judges were Messrs. Fairchild, Eustis, and Carlisle. In the annual contests of the Philolexian Society M. H. France won the first prize in oratory and B. M. L. Ernst the second, and B. M. L. Ernst won the first prize in debating and S. Strunsky the second.

The 1900 Columbian Board has elected the following officers: Chairman, H. S. Giddings; Treasurer, R. L. Spiller; Secretary, H. S. Harrison. The University Chorus, under the leadership of Professor MacDowell, is now thoroughly organized, and intends to give a concert for the benefit of the crew in the near future. The negotiations for a chess match between the American and English universities were broken off, owing to the impossibility of agreeing as to the eligibility of graduate students, and the Columbia Chess Club is now devoting all its attention to the coming team match with the University of Pennsylvania. The play of the Musical Society for this year was a musical comedy called *Vanity Fair*, by Donald MacGregor, '96, and A. A. Powers, '97. It was played for a week in February at the Carnegie Lyceum and won a decided success. Extra performances were given on April 26 in Brooklyn, and on April 29 in New York.

F. P. KEPPEL, '98

SUMMARIES OF UNIVERSITY LEGISLATION

THE TRUSTEES. MARCH MEETING

Announcement was made of the gift by Mr. Joseph F. Loubat (Duc de Loubat) of the property Nos. 503-511 Broadway and 74-82 Mercer street, valued at \$1,100,000, subject to an annuity during his life; the property or its proceeds to be applied, after his death, to the endowment of a fund to be known as the Gaillard-Loubat Library Endowment Fund for the maintenance and increase of the Library; and it was

Resolved, That in accepting the deed, from Mr. Joseph F. Loubat (the Duc de Loubat), of the premises Nos. 503-511 Broadway and 74-82 Mercer Street, the Trustees tender to him their thanks for the generous provision he has thus made for the maintenance of the University Library after his death, and express their gratification at being permitted to perpetuate the name of his family in connection with so noble and enduring a foundation.

Resolved, That Mr. Loubat be invited to sit for his portrait.

A vote of thanks was also tendered to Mr. Samuel Sloan for his gift to the Department of Geology of eight boxes of fossil plants from the coal mines at Scranton, Pa.

The following action was taken with regard to a gymnasium fee:

Whereas the new gymnasium will afford additional advantages and opportunities to the students for the next academic year and thereafter, but will impose a considerable additional charge upon the income of the University;

Resolved, That from and after July 1, 1898, an additional fee of \$7.00 per annum be established, to be known as the gymnasium fee, payable at the beginning of the academic year, and that all students be required to pay the same, excepting students in the College of Physicians and Surgeons, but not excepting free students or students granted a reduction of fees.

Resolved, That students in the College of Physicians and Surgeons, and officers, fellows, and graduates of the University be permitted to use the gymnasium and baths upon payment of the gymnasium fee.

Resolved, That the payment of the gymnasium fee shall entitle the person paying it to the use of the gymnasium and baths, and to the exclusive use of a locker for the current academic year.

In accordance with Chapter III, Section 1, of the Statutes, the President reported that the Faculty of the College and the Faculty of Applied Science had modified the conditions of graduation for students under their charge, so as to require two hours a week of attendance upon the gymnasium of all students in the first two classes, respectively, of the College and of the Schools of Applied

Science; also, that the Faculty of Applied Science had passed the following resolution, involving a modification of the curriculum:

Resolved, That for reasons of weight the substitution of a subject in one course for an equivalent in another course may be made by the Faculty, on the request of any candidate for a degree under this Faculty, provided that such substitution have the approval of the heads of the departments concerned, and of the department giving the fundamental instruction that leads to the degree for which the student is a candidate.

The professorship now held by Professor Calvin Thomas was designated the Gebhard Professorship of the Germanic Languages and Literatures, in recognition of the bequest of Frederick Gebhard and for the purpose of perpetuating the title of the Gebhard Professorship in German, held for many years by Professor Schmidt and subsequently by Professor Boyesen. At a previous meeting of the Trustees the title of the Da Costa Professorship of "Biology" was changed to "Zoölogy," and for the sake of conformity it was

Resolved, That the name of the Da Costa Laboratory of Biology be changed to the Da Costa Laboratory of Zoölogy.

Authority was given to equip, in the Department of Metallurgy, a metallurgical laboratory for purposes of practical illustration.

Upon the recommendation of the Faculty of Applied Science, the opening of a Summer School in Chemistry was authorized.

Russell H. Chittenden, Ph.D., was appointed the Director of the Department of Physiological Chemistry and lecturer therein, for the academic year, beginning July 1, 1898, and Alfred Newton Richards, A.B., and Henry Edwin McDermott, A.B., were appointed as assistants in physiological chemistry from the same date.

THE TRUSTEES. APRIL MEETING

A vote of thank was tendered to Messrs. Burnham, Williams & Company, of the Baldwin Locomotive Works, for their gift to the Department of Mechanical Engineering of the locomotive "Columbia," which was exhibited by them in the Transportation Building of the Chicago Exposition in 1893; also to Messrs. F. A. Schermerhorn, Robert Schell, John Stanton, and Sumner Hollingsworth, for their gifts, amounting together to \$2,300, for the purpose of installing this locomotive in the Mechanical Laboratories; and to the Pennsylvania Railroad Company for its offer to transport the locomotive from Philadelphia to New York free of charge.

A vote of thanks was tendered to the Dodge Manufacturing Company for their proposal to install in the Mechanical Laboratory,

as a memorial of the late Wallace H. Dodge, a typical outfit of transmissive machinery and apparatus, representative of what is known as the American system of rope-driving, as distinguished from the usual practice in England; and it was ordered that a suitable memorial tablet be placed in the Laboratory in connection with this gift.

A vote of thanks was also tendered to Dr. J. Ackerman Coles for a gift of bronze busts of Homer and Æsculapius, and a reproduction of the statue known as "The Dying Gaul;" also to Mr. Francis S. Bangs, '78, for the gift of a rare pamphlet relating to the history of the College.

Chapters XI, XVI and XX of the Statutes, and Part 2, Chapter II of the By-Laws, were amended.

The Committee on Finance presented the budget for the fiscal year ending June 30, 1899, and the same was ordered printed and made a special order for the next meeting of the Trustees.

The President reported, under Chapter III, Section 1, of the Statutes, that the Faculty of the College had accepted History as an alternate subject for admission to the Freshman class.

The President announced the resignation of Dr. McLane as Professor of Obstetrics, and it was

Resolved, That, in accordance with the request of the Faculty of the College of Physicians and Surgeons, there be created, from and after September 30, 1898, the office of Emeritus Professor of Obstetrics, without salary, but with a seat in the Faculty.

Resolved, That the resignation of James W. McLane, M.D., as Professor of Obstetrics, be accepted, to take effect September 30, 1898; and that, upon his retirement from the chair of Obstetrics, Professor McLane be appointed Emeritus Professor of Obstetrics, without salary, and with a seat in the Medical Faculty.

Resolved, That this transfer of Dr. McLane from active service as Professor of Obstetrics to the chair of Emeritus Professor of Obstetrics shall not affect in any way his position as Dean of the Medical Faculty.

Resolved, That, in accepting, upon the recommendation of his colleagues, Dr. McLane's resignation as Professor of Obstetrics, the Trustees take pleasure in placing upon record their high appreciation of Dr. McLane's service as the incumbent of that chair for thirty years, and their satisfaction that his retirement from the active duties of teaching does not involve his retirement from his duties as Dean of the College of Physicians and Surgeons.

Professor Charles S. Pellew was assigned a seat in the College Faculty.

The Trustees appointed Edwin B. Craigin, M.D., as Lecturer in Obstetrics, from and after September 30, 1898, for the remainder

of the academic year; and confirmed the appointment under the Faculty of the College of William Claflin Andrews, E.E., as Assistant in Physics, from and after February 23, 1898, for the remainder of the academic year, in place of H. Elmo Keyes, resigned.

THE TRUSTEES. MAY MEETING

At the meeting of the Trustees held on May 2, the budget for the fiscal year ending June 30, 1899, being the special order, was considered and adopted.

The Sub-Committee on Buildings and Grounds submitted a pamphlet on gifts and endowments, containing the names of benefactors from 1756 to date, with a report recommending measures to be taken for perpetuating the names of donors. The Committee was authorized to place suitable tablets in Havemeyer Hall and Schermerhorn Hall, bearing the names of the donors; and the building now known as Physic Building was designated Fayerweather Hall in recognition of the bequest of Daniel B. Fayerweather. It was also ordered that the list of special funds, with the names of the donors, be printed in the annual catalogue; that the names of benefactors of the Library be inscribed upon tablets to be placed in the corridor surrounding the general reading room; and that the special libraries and collections given by individuals be designated in like manner. It was also ordered that a book to be entitled "Record of Gifts and Endowments" be kept in the President's office, and that heads of departments be requested to report to the President all gifts, however small, in order that they may be properly entered, and that a list of such gifts be published as an appendix to the President's annual report.

In recognition of the gift of \$5,000 received from Mr. Abram S. Hewitt, '42, and of the bequest of \$5,000, received from Mr. Joseph W. Harper, '48, it was voted to establish four scholarships, two to be known as the Hewitt scholarships, and two to be known as the Harper scholarships, to be open to competition to graduates of the New York City high schools.

The following letter, addressed to the President by the friends of the late Joseph Mosenthal, who was for many years the Director of the Mendelssohn Glee Club, was presented, offering the sum of \$7,500 to endow a fellowship in music.

"The undersigned, acting on behalf of themselves and many other subscribers to the Fund, desire to present to the Trustees of Columbia College the sum of \$7,500, to be used for the establishment of a fellowship in music, to be known as the Joseph Mosen-

thal Fellowship in Music. It is our wish that, in the first instance, the income of this fellowship shall be awarded at least every second year to the best qualified candidate, either man or woman, who is prepared to devote himself to the study of musical composition at Columbia University or elsewhere, in this country or abroad, under the supervision of some instructor approved by the President and the head of the Department of Music. This fellowship being established by the friends and admirers of the late Mr. Mosenthal, as a memorial of their regard for him and as a testimonial of their sense of the value of his services to music in the City of New York, it is the wish of the donors that it shall be administered at all times in the broadest spirit and with the best judgment of the moment so as to accomplish the best result. For this reason, the donors will be glad to give to the Trustees full authority to adopt and change, from time to time, regulations concerning the award of the fellowship, and to enlarge its scope; provided, always, that the income shall be used so as to secure for some competent student of music advanced educational advantages that otherwise would be out of his reach. Upon being informed that the Trustees will accept the proffered fund, upon the conditions indicated in this letter, a cheque for the sum of \$7,500 will be sent to the Treasurer of the College."

Respectfully,

HORATIO J. BREWER,	SAMUEL COLMAN,
MRS. JAMES HERBERT MORSE,	ROBERT H. ROBERTSON,
MISS ELIZABETH BLAKE,	MRS. G. L. CHENEY,
MRS. ISACC N. SELIGMAN,	E. FRANCIS HYDE,

Committee

By HORATIO J. BREWER,
Chairman"

The gift was accepted upon the conditions stated in the letter and a vote of thanks was tendered to the donors.

A vote of thanks was also tendered to Professor Edward A. MacDowell for the gift of a number of books of music and musical scores and for a collection of autographs of celebrated musicians; also to the Shaw Electric Company and to the J. G. Brill Company for gifts to the Department of Mechanical Engineering of electric apparatus and of an electric street car.

The President reported that, under Chapter I, Section 4, of the Statutes, he had granted leave of absence for the remainder of the academic year, to the Rev. George R. Van de Water, D.D., Chaplain of the University, who had entered the service of the United States as Chaplain of the 71st Regiment, N. G. S. N. Y.; to Professor John B. Moore, Hamilton Fish Professor of International Law and Diplomacy, at the request of the President of the United

States, in order that Mr. Moore might accept the position of Assistant Secretary of State; to Professor Charles E. Pellew, Adjunct Professor of Chemistry, who had entered the service of the United States as a member of the troop that has volunteered out of the membership of Squadron A, N. G. S. N. Y.; and to Mr. George F. Sever, Instructor in Electrical Engineering, who had been ordered to duty in charge of the Signal Station at Montauk Point as a member of the Naval Reserve of the State of New York.

The President also reported the resolutions adopted by the University Council on April 19, with reference to the conferring of degrees in case of students who by reason of enlistment, or membership in the National Guard, were obliged to leave college, and was authorized to confer degrees in accordance with such resolutions.

The following reappointments were made: James Rignall Wheeler, Ph.D., Professor of Greek; James C. Egbert, Jr., Ph. D., Adjunct Professor of Latin; and James Hervey Hyslop, Ph.D., Professor of Logic and Ethics.

Earl B. Lovell, C. E., was appointed Adjunct Professor of Civil Engineering for the term of three years or during the pleasure of the Trustees. (See page 250.)

Charles Augustus Strong, A.B., Lecturer in Psychology, was granted leave of absence, and Thomas S. Miller, Ph. D., was appointed lecturer in his place during the academic year 1898-99. Curtis Hidden Page, Ph.D., Tutor in the Romance Languages and Literatures, was granted leave of absence, and David Jordan, A.B., Assistant; John Driscoll Fitzgerald, A.B., Assistant; and Henry Bargy, A.M., Lecturer, were appointed.

The President announced that arrangements had been made for giving clinical instruction in St. Luke's Hospital and in St Mary's Hospital, and the following appointments were made: Robert Abbe, M.D., Clinical Lecturer in Surgery at St. Luke's Hospital; George Montague Smith, M.D., Instructor in Surgery; Charles North Dowd, M.D., Instructor in Surgery; Charles Talbot Poore, M.D., Clinical Lecturer in Surgery at St. Mary's Hospital for Children.

The title of Professor Wilson was changed to Professor of Zoölogy, and that of Ira H. Woolson, E.M., was changed to Instructor in Mechanical Engineering.

The President was authorized to arrange for giving instruction in history to undergraduates by one of the Prize Lecturers of the School of Political Science.

UNIVERSITY COUNCIL. FEBRUARY MEETING

A large number of appointments by the several faculties were confirmed.

At the regular meeting of the University Council held February 15, 1898, the Faculty of Philosophy was authorized to offer Education as the equivalent of a major and one minor subject, and the rules and regulations relating to higher degrees were amended accordingly. The regulations concerning the degrees of A.M., Ph.D., and LL.M., were also amended.*

The Council adopted the following resolutions recommending the President to confer degrees when all requirements are satisfied, without waiting for the meeting of the Council.

Resolved, That the President be recommended to confer the degrees of Master of Arts and Doctor of Philosophy upon those persons who may be certified to him by the Secretary of this Council as having satisfied all the statutory requirements; such certificate to be based upon the proper papers deposited in the hands of the Secretary of the Council by the various University Faculties.

Resolved, That the Secretary give in a supplementary minute the names of the persons whom he may certify to the President, in accordance with the preceding resolution, together with such further particulars as may be necessary to give completeness to the record.

The following were recommended to the President for the degree of Doctor of Philosophy:

Matthew Brown Hammond, Ph.B., University of Michigan, 1891; M.L., University of Wisconsin, 1893. Major subject: Political Economy and finance. Minor subjects: Sociology, Statistics and American History. Dissertation: The Cotton Industry.

Charles Otto Baese, B.S., New York University, 1892; LL.B., New York University, 1893. Major subject: Finance and Taxation. Minor subjects: Administrative Law and Statistics. Essay: Assessment of Customs Duties: ad valorem and Specific Duties Compared.

The following candidate was recommended to the President for the degree of Master of Arts:

Miss Lucia Morrill, A.B., Wellesley College, 1890. Major subject: Greek. Minor subjects: Latin; Philosophy. Essay: A Study of Apollo in Pindar.

* The amended regulations are printed in the announcements for 1898-9 of the Faculties of Philosophy, Political Science, and Pure Science.

UNIVERSITY COUNCIL. APRIL MEETING

At the meeting of the University Council held April 19, 1898, the following action was taken:

Resolved, That in case of excessive cost and delay in publishing a dissertation which has been approved by a department and accepted for publication by a reputable journal or scientific or literary association, the degree of Doctor of Philosophy may be conferred. The facts in every such case concerning the publication are to be certified to the Council by the faculty concerned.

The following candidate was recommended to the President for the degree of Doctor of Philosophy:

John Franklin Crowell, A.B., Yale University, 1883; Dr. Litt. (honorary), University of North Carolina, 1889. Major subject: Social Science. Minor subjects: Economics, Administrative and International Law. Dissertation: The Logical Process of Social Development.

The Committee on Award of University Fellowships reported as follows:

There were received and referred, under the rules, 149 applications for fellowships, apportioned among the several faculties as follows: Faculty of Applied Science, 2; Faculty of Philosophy, 56; Faculty of Political Science, 50; Faculty of Pure Science, 41.

On the basis of the reports submitted by the several departments and faculties, the twenty-four University fellowships for 1898-99 were awarded to the following persons:

Carl Lotus Becker, B.L., University of Wisconsin, 1896, and graduate student, 1896-98, *Constitutional Law*.

Charles Eugene Edgerton, A.B., Hamilton College, 1882, *Political Economy*.

Elmer Wallace Firth, C.E., Cornell University, 1895; Columbia University, candidate for the degree of A. M., 1898, *Sanitary Engineering*.

George Balthazar Germann, A.B., Columbia College, 1895, and Assistant in Mathematics, 1895-98, *Education*.

William Henry Glasson, Ph.B., Cornell University, 1896, and Fellow, 1896-97; Fellow in the University of Pennsylvania, 1897-98, *Administration*.

Louis Herbert Gray, A.B., Princeton College, 1896; graduate student at Princeton University, 1896-97; University Fellow in Indo-Iranian Languages, Columbia University, 1897-98, *Indo-Iranian Languages*.

Tracey Elliot Hazen, A.B., University of Vermont, 1897; Columbia University, University Scholar in Botany, 1897-98, *Botany*.

George Frederick Heffelbower, A.B., University of Michigan, 1897, and candidate for the degree of A.M., 1898, *Latin*.

Bert Hodge Hill, A.B., University of Vermont, 1895; Principal of the Newport, Vt., Academy, 1895-98, *Greek*.

Owen Benjamin Huntsman, A.B., Harvard University, 1897, and candidate for the degree of A.M., 1898, *Philosophy*.

John Duer Irving, A.B., Columbia College, 1896; Columbia University, University Fellow in Geology, 1897-98, *Geology*.

Edward Kasner, B.S., College of the City of New York, 1896; A.M., Columbia University, 1897, and University Fellow in Mathematics, 1897-98, *Mathematics*.

Walter Coluzzi Kretz, A.B., Columbia College, 1896; A.M., Columbia University, 1897, and University Scholar in Astronomy, 1897-98, *Astronomy*.

Newton Dennison Mereness, A.B., University of Michigan, 1892, and A.M., 1894; Columbia University, University Scholar in History, 1895-96, *History*.

Joseph Warren Miller, Jr., B.S., Pennsylvania State College, 1897, *Mechanics*.

Frederick Clark Paulmier, B.S., Princeton University, 1894, and M.S., 1896; graduate student at Columbia University, 1896-98, *Zoölogy*.

Frederick John Pope, A.M., Queens University, Kingston, Canada, 1891; graduate student at Columbia University, 1897-98, *Chemistry*.

Jesse Eliphalet Pope, B.S., University of Minnesota, 1895, and M.S., 1897; graduate student at Columbia University, 1897-98, *Economics*.

Comodore Edward Prevey, B.L., University of Wisconsin, 1897; graduate student at Yale University, 1897-98, *Statistics*.

Arthur Frank Joseph Remy, A.B., College of the City of New York, 1890; A.M., Columbia University, 1897, and University Scholar in Comparative Philology, 1897-98, *Comparative Philology*.

William R. Smith, A.B., University of Texas, 1897, and candidate for A.M., 1898, *American History*.

Edwin Platt Tanner, A.B., Columbia College, 1897, Columbia University, University Scholar in History, 1897-98, *American History*.

Rudolph Tombo, Jr., B.S., College of the City of New York, 1895; Columbia University, University Scholar in German, 1897-98, *German*.

Robert Sessions Woodworth, A.B., Amherst College, 1891; A. B., Harvard University, 1896, and A.M., 1897; Assistant in the Physiological Laboratory of Harvard University, 1897-98, *Psychology*.

The Committee also reported the following list of alternates, to succeed in the order named, to vacancies occurring in the above list, not later than October 15th next.

From the Faculty of Philosophy:

Stephen Faunce Sears, A.B., Harvard University, 1896; graduate student at Columbia University, 1897-98, *Literature*.

Edmund Burke Huey, A.B., Lafayette College, 1895; Clark University, graduate student in Psychology, 1897-98, *Psychology*.

William Popper, A.B., Columbia College, 1896; A.M., Columbia University, 1897, and University Scholar in Semitic Languages, 1897-98, *Semitic Languages*.

Francis Harold Dike, A.B., Columbia College, 1897; student at University of Paris, 1897-98, *Romance Literature*.

From the Faculty of Political Science:

Maurice Henry Robinson, B.L., Dartmouth College, 1890, and A.M., 1897, *Finance*.

John Randolph Neal, A.B., University of Tennessee, 1893; graduate student at Vanderbilt University, 1893-96; graduate student at Columbia University, 1897-98, *Public Law*.

Frederick Morgan Davenport, A.B., Wesleyan University, 1889; graduate student at Columbia University, 1897-98, *Sociology*.

From the Faculty of Pure Science:

Arthur Dexter Butterfield, B.S., Worcester Polytechnic Institute, 1893, and candidate for M.S., 1898, *Astronomy*.

David Griffiths, B.S., University of Nebraska, 1892, and M.S., 1893, *Botany*.

Sherburne Frost Taylor, B.S., Cornell University, 1897, *Chemistry*.

Charles Hill, B.S., University of Michigan, 1891, and M.S., 1892, *Zoölogy*.

Heinrich Ries, Ph.B., Columbia College, 1892; A.M., Columbia University, 1894, and Ph.D., 1896; and Barnard Fellow for 1897-98, was appointed Barnard Fellow for 1898, subject to the action of the Faculties of the College and of Applied Science.

Robert Bowie Owens, E.E., Columbia University, 1891, Professor of Electrical and Steam Engineering at the University of Nebraska, was appointed Tyndall Fellow for 1898-99.

The President gave notice that the Trustees had amended, at the request of the Council, the statutes in regard to the Christmas holidays. The University Council now has the power to arrange the date of the beginning and ending of such holidays.

It was resolved that students receiving the degree at Commencement are expected to wear the academic cap and gown.

The following resolutions were adopted unanimously :

Resolved, That in the case of officers of the University who, by reason of membership in the National Guard or in the Naval Reserve, or by reason of enlistment, are obliged to abandon their work at the University, the University Council recommends that a leave of absence be granted at full pay for the remainder of the academic year, and that the position of every such officer in the University shall be open to him without disadvantage, either at the beginning of the fall term or at the end of the next academic year.

Resolved, That in the case of students of the graduating classes in the College and in the various schools of the University, who, by reason of membership in the National Guard or in the Naval Reserve, or by reason of enlistment, are obliged to abandon their academic studies, the degree will be granted without examination to such students as may be recommended therefor by the Faculty; and students whose academic record does not justify such a recommendation will be given the opportunity to make good their record without disadvantage by reason of their absence in the public service.

Resolved, That in the case of students in other than the graduating classes of the current year, who, by reason of membership in the National Guard or in the Naval Reserve, or by reason of enlistment, are obliged to abandon their academic studies, a leave of absence will be granted, covering the whole term of their absence in the public service, at the end of which every such student will be restored, without disadvantage, to the status held at the time of his leaving in the public service.

The following resolutions were also adopted :

Resolved, That there be instituted a standing committee to consist of nine professors of the University, to be designated the Appointment Committee whose duty it shall be to recommend graduates of the College or University for teaching or other positions, and to assist competent graduates to obtain such positions.

Resolved, That a committee of five professors of the University be appointed to inquire and report to the Council as to what extension, if any, of the summer work of the University is possible and expedient during and after the summer of 1899; and that the President be requested to act with such committee as its chairman.

UNIVERSITY PUBLICATIONS

For purposes of record and information the BULLETIN publishes a complete list of the recent issues of the various serial Studies and Contributions issued from the University.

COLUMBIA UNIVERSITY CONTRIBUTIONS TO PHILOSOPHY,
PSYCHOLOGY AND EDUCATION

Vol. II. 1. Hegel as Educator, by Frederic Ludlow Luqueer, Ph.D., Principal of Public school No. 22, Brooklyn, N. Y. May, 1896. Price, \$1.00. 2. Hegel's Doctrine of the Will. By John Angus MacVannel, Ph.D. Instructor in Psychology and Education, Pratt Institute, Brooklyn, N. Y. June, 1896. Price \$1.00. 3. The Basis of Early Christian Theism. Lawrence T. Cole, Ph. D. Post-graduate Scholar of the Church University Board of Regents. May, 1898. Price, 50 cents. 4. Early American Philosophers. By Adam Leroy Jones, Ph.D. Sometime Fellow in Philosophy in Columbia University. May, 1898. Price, 75 cents.

Orders for these numbers, or requests for information concerning them, should be addressed to The Macmillan Company.

CONTRIBUTIONS FROM THE MINERALOGICAL DEPARTMENT

Vol. VII. Minerals in Rock Sections. A text-book. Pp. 115, with 42 cuts. By L. Mac I. Luquer.

Vol. VIII. The Optical Character of Crystals—Part II of a text book on Characters of Crystals. By A. J. Moses. From the *School of Mines Quarterly*. January and April, 1898.

CONTRIBUTIONS FROM THE OBSERVATORY

No. 12. Catalogue of Sixty-five Stars near 61 Cygni. By Herman S. Davis, Ph.D. No. 13. The Parallaxes of 61¹ and 61² Cygni. By Herman S. Davis, Ph.D. No. 14. Catalogue of Thirty-four Stars near "Bradley 3077." By Herman S. Davis, Ph.D.

CONTRIBUTIONS IN HISTORY, ECONOMICS, AND PUBLIC LAW.

Vol. VIII. No. 4. Public Administration in Massachusetts: The Relation of Central to Local Activity. By Robert Harvey Whitten. Price, \$1.00.

Vol. IX. No. 2. German Wage Theories: A History of their Development. By James W. Crook. Price, \$1.00.

Vol. IX. No. 3. Centralization of Administration in New York City. By John Archibald Fairlie. Price, \$1.00.

CONTRIBUTIONS FROM THE DEPARTMENT OF BOTANY

No. 125, concluding Vol. V. Studies in the Botany of the Southeastern United States—XII. By J. K. Small (1897).

VOLUME VI

No. 126. The North American Species of *Porella*. By M. A. Howe (1897). No. 127. A new species of Wild Ginger, hitherto confounded with *Asarum Canadense* L. By E. P. Bicknell (1897). No. 128. Two new Species of *Sanicula* from the Southern States. By E. P. Bicknell (1897). No. 129. The Anthoceroaceae of North America. By M. A. Howe (1898). No. 130. The Evolution of assimilating Tissue in Sporophytes. By C. C. Curtis (1898). No. 131. Studies in the Asclepiadaceae, I, II. By Anna Murray Vail (1898). No. 132. Studies in North American Polygonaceae, I. By J. K. Small (1898). No. 133. New or noteworthy American Grasses, VIII. By G. V. Nash (1898). No. 134. On an Abnormal Cone in the Douglas Spruce. *Pseudotsuga mucronata*. By F. E. Lloyd (1898). No. 135. Two New Grasses from Van Cortlandt Park, New York City. By E. P. Bicknell (1898). No. 136. *Selaginella rupestris* and its allies. By L. M. Underwood (1898). No. 137. A Revision of the North American Species of *Ophioglossum*. By Elizabeth G. Britton (1897). No. 138. Studies in the Botany of the Southern United States—XIII. By J. K. Small (1898). No. 139. A new Southwestern Rose. By E. O. Wooton (1898). No. 140. On hypertrophied Scale-Leaves in *Pinus ponderosa*. By Francis E. Lloyd (1898). No. 141. Studies in the Asclepiadaceae—III. By Anna Murray Vail (1898). No. 142. New American Hepaticae. By Marshall A. Howe (1898). No. 143. A Revision of the North American Eurhynchia. By A. J. Grout (1898). No. 144. The Study of Botany in High Schools. By L. M. Underwood (1898).

These are reprints of the more important studies published by the workers in this department and at irregular intervals brought together in this form. Part 1 of Volume V has been issued and Part 2 of the same volume is now in preparation.

UNIVERSITY STATISTICS

Year	College	School of Medicine	School of Law	School of Mines	School of Political Science	School of Library Economy	School of Philosophy	School of Pure Science	Barnard College	Deduct for Repetitions	Total
1848-49	130										130
1849-50	130										130
1850-51	135										135
1851-52	142										142
1853-54	172										172
1854-55	167										167
1856-57	185										185
1857-58	152										152
1858-59	173										173
1859-60	211		62								273
1860-61	158	260	101								519
1861-62	211	209	111								531
1862-63	183	254	150								587
1864-65	150		158	29							337
1865-66	149	465	178	89							881
1866-67	140	350	166	109							765
1867-68	144	319	182	109							754
1868-69	147	309	204	93							753
1869-70	129	338	230	79							776
1870-71	120	327	243	92							782
1871-72	117	332	291	114							854
1872-73	123	359	371	136							989
1873-74	127	387	438	162							1114
1874-75	151	452	522	201							1326
1875-76	172	410	573	206							1361
1876-77	190	439	526	219							1374
1877-78	227	413	462	238							1340
1878-79	246	485	436	243							1410
1879-80	278	513	451	252							1494
1880-81	285	555	455	249	11						*1555
1881-82	295	547	471	267	22					4	*1587
1882-83	285	543	406	264	30					15	*1528
1883-84	290	505	365	286	42					9	*1488
1884-85	282	490	365	268	51					32	*1456
1885-86	273	502	344	235	71					39	*1425
1886-87	271	606	399	260	74	20				46	*1630
1887-88	289	809	461	230	61	30				60	*1880
1888-89	288	702	477	232	60					51	*1768
1889-90	309	619	447	257	98					56	*1730
1890-91	281	534	623	300	197		85			82	*2021
1891-92	296	570	315	346	195		124			265	*1846
1892-93	301	661	265	337	166		130	59		282	*1919
1893-94	276	782	270	379	226		163	67		278	*2163
1894-95	253	799	261	407	94		95	34			1943
1895-96	260	699	324	370	62		124	34			1873
1896-97	302	610	354	389†	64		91	48			1858
1897-98	326	737	366	420†	74		115	52	67		2157

*Including duplication in University Faculties, as indicated.

†Schools of Applied Science.

The preceding table, compiled from the University catalogues and reports, shows the number of students in the University from 1848 to 1898, with the exception of 1852-3, 1855-6, and 1863-4, with regard to which exact figures are not at present to be obtained.

The following table shows the registration in the various schools of the University, May 1, 1898:

The College:

Seniors	49	
Juniors	55	
Sophomores	93	
Freshmen	109	
Special Students	29	
		<hr/>
		335

The Faculty of Applied Science:

Graduate Students	9	
Fourth Year Students	69	
Third Year Students	64	
Second Year Students	86	
First Year Students	182	
Special Students	19	
		<hr/>
		429

The Faculty of Law:

Third Year Students	94	
Second Year Students	134	
First Year Students	137	
Special Students	2	
		<hr/>
		367

The Faculty of Medicine:

Fourth Year Students	143	
Third Year Students	151	
Second Year Students	189	
First Year Students	220	
Special Students	59	
Old Curriculum Student	1	
		<hr/>
		763

The Faculty of Political Science	82	
The Faculty of Philosophy	121	
The Faculty of Pure Science.....	56	
		<hr/>
		2,153

* From Barnard College	67
Auditors	29
Total	2,249
Receiving instruction at Barnard College	176
† Receiving instruction at Teachers College	139
Total number of students under the educational control of the University	2,564

* Receiving instruction in the University Faculties.

† Not including pupils in the School of Observation and Practice and the Extension Classes connected with Teachers College.



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Author Columbia University

Title Bulletin. Nos. 15-20, 1896-98. Index 1-20.

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